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RUGER REDHAWK
ONE-GUN SOLUTION

FIRST LOOK

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Bad News For Survival Food



Something just happened that explains why tons and tons of survival food are literally flying off warehouse shelves. We've never seen anything like it before. Right now, our truckers can barely keep up with the rapidly rising demand. We have even been getting reports that this food is actually sold out in many parts of the country – and unfortunately, may be for a while.

WHAT THE HECK IS GOING ON?

We were determined to figure out why so much survival food has been disappearing… and where it was going. So we did some digging around on our own and it paid off.

Wait until you see what we found out. It caught us totally by surprise because it involves a well-known agency that is responsible for aiding Americans in times of crisis. The possibility that they could have something to do with a potential survival food shortage made no sense to us … unless they knew something we didn't. We were determined to discover the truth for ourselves – and for you.

Now, it was impossible to say precisely what these people were up to, but we knew they must be planning for something really big – something really out of the ordinary.

We don't know about you, but any time outsiders starts prying into the affairs of private businesses like ours, we can't help but get concerned – and frankly, we are. After all, here's an agency we never heard from before suddenly asking questions about foods intended solely for emergency use in a disaster. Certainly makes you think, doesn't it?

IT GETS EVEN BETTER – WE HAVE THE PROOF IN WRITING!

Just as we were beginning our investigation, our warehouse manager was shocked to receive a request from an official of that very same agency.

They wanted to know:

- How much survival food did we have on hand?
- Where is inventory kept?
- How quickly can we produce more?
- Just how fast could they get their hands on it?

KNOW WHAT WE HEARD? NOTHING.

It's like talking to a wall. But we're going to keep the pressure on until we get some believable information. The truth is, revealing a plot like this could land us in some serious hot water. There's a reason they're not going public with any details. But we are absolutely convinced they are up to something. And we think you and every other American deserves an explanation.

Listen, we all know most people will be woefully unprepared when disaster strikes. The smart among us prefer to take steps to ensure that in a crisis, we won't be relying on someone else to take care of our families. That's our job.

Anyone not taking action will find themselves in the same boat as millions of other brainwashed souls who go through life thinking everything is fine. Until one day it is definitely not fine and they are OUT OF LUCK!

GO TO GETFOOD46.COM RIGHT NOW.

We just posted a free video presentation that exposes the truth. You can view it at GETFOOD46.COM. We have to warn you that you'll probably think what it shows is really disturbing. Because it sure seems like the American people are being kept in the dark about something that could threaten not only our way of life, but even our very lives.

Go to GETFOOD46.COM now and you'll also learn what is the #1 item to hoard in a crisis and why supplies of this critical item are so low in some places or even completely gone – unavailable at any price.

SEE THIS VIDEO WHILE YOU STILL CAN.

Watch the controversial video that thousands of smart patriots have already seen in recent days. Go to GETFOOD46.COM and discover the #1 item most critical in a crisis. Go watch this important video now before they force us to shut it down. What you'll learn could literally save your family's lives.

LOG-ON NOW TO GETFOOD46.COM

11.15



ON THE COVER:
Stuck in a wide-spread collapse of the power grid, David Hartzell searches the pitch-black streets for a way out of town. The Wunderer LS shirt courtesy KUHL; the pants courtesy prAna; the belt courtesy 5.11 Tactical; the Contego backpack courtesy Kilimanjaro Gear; the LD41 flashlight is courtesy Fenix; and the AK-47 Field Knife is courtesy Cold Steel.

Model: David C. Hartzell III
Photography by Henry Z. De Kuyper
Design: Jesse Cao

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FIRST WORDS

11.15



Ryan Lee Price
rprice@EngagedMediaInc.com

Developing **Mental Strength**

You can dead-lift 400 pounds. You can run Ragnar or a 100-mile endurance course while barely breaking a sweat. You can hold your breath underwater for nearly three minutes.

These are admirable traits to possess, physical attributes that will surely serve you well in any survival situation, but bodily prowess isn't everything. It represents only a portion of your survival arsenal—and a very small one at that.

Fear, self-doubt, and the overwhelming and emotionally crushing blow of an emergency situation can be paralyzing, freezing you to complete uselessness. Sure, your body can lift 400 pounds, but the second your brain doesn't want to, you'll be lucky to be able to lift your own arms.

The opposite is true, as well. We've all heard stories of soldiers being shot multiple times and completely disregarding the pain until the mission was completed. It wasn't that their bodies were especially stronger than others; it was their brains that were well prepared for the what-ifs and could-bes.

The world enjoys few absolutes. Some can handle most anything thrown at them, while other people can barely function when the world only changes slightly. Why?

Atrophy results when muscles are not used. Athletes who change sports, discontinue a sport altogether, or stop using a particular group of muscles will discover that those muscles will quickly begin to weaken when not used regularly.

The same thing can happen to your brain. Your brain is not only your most valuable tool to be used in every survival situation you are subjected to; it also needs to be exercised and trained just as vigorously as your "traditional" muscles. To prepare your mind for what your body might experience, you'll need to first consider all possible threats to it. As you go about your daily routine, you should constantly be playing a game of "what if."

Everywhere you go, your mind should entertain you with survival scenarios: For example, what if the car next to you ran you off the road? What if your co-worker pulled out a gun? These scenarios make up the reality of life and death, and only if you've addressed the practical possibilities, the likely outcomes, and your reactions to them, will your brain be less surprised if and when something unusual and dangerous happens.

Next, find a reason to live, to take action, to thwart the emergency. Think of something irreplaceable, such as your spouse or your children. This is your motivation beyond self-preservation. This is the reason you'll dig yourself out of the wreckage and push on.

By keeping your mind ever alert to the possibilities of disaster while focusing on your own goals and all the things you cherish, you will slowly develop a strong mental resolve, a brain that is good at reading situations, reacting to them, and overcoming whatever life throws your way.

You maybe physically ready, but are you mentally ready?

Ryan

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NEW 11.15 PRODUCTS



1

Powerpot

The Powerpot is for anyone who has been wishing someone would invent a cooking pot that also charged mobile devices. Using thermoelectric technology, it heats up your food while also powering up your GPS and other necessities (and lesser-needed necessities) while away from it all.

·Works on any stove/heat source
·Hard-anodized aluminum pot
·Has 1 or more USB ports, depending on model
·Real-time power meter

Powerpractical.com
Starts at $19.99



2

Knife with Flashlight

You know that moment when peanut butter and chocolate meet? This item is the survival equivalent, when a knife and light meet. The LK375 is a folding knife with a flashlight built right into the handle. It's a one-hand blade-opening action, and there's a spearpoint tip for puncturing, a fine edge for scraping and fine cutting, and a serrated edge for ripping and cutting (like plastic).

·110 lumens
·173ft beam distance
·Waterproof
·Blade is 3.75 inches

Coastportland.com
$58.99



3

Commander X Pack

This bag has a side fleece-lined spotting scope pocket, a top-loading spin drift collar, a lower extra-big door, side pockets, a hydration pocket, rifle and bow drop-down pocket, and rain cover. And the pack bag attaches to a frame with zippers and compression straps.

·Pack weighs 4 pounds
·Frame is 5 pounds, 3 ounces
·Strong 1680D nylon ballistic/Robic nylon

Alpsoutdoorz.com
$329.99

CAN'T GET ENOUGH *ASG*? WHEN YOU'RE NOT OFF THE GRID, BE SURE TO FIND US ON **FACEBOOK:** facebook.com/americansurvivalguidemagazine and **INSTAGRAM:** #americansurvivalguide



5

Portable, Private Shower

The RS500 Privacy Shelter is a collapsible tent that works with any portable or ORV shower. It has loops for hanging a showerhead or even lights. And, in the sun, the color of the fabric still keeps things private. The zipper is inside for easy use, and the quick-connect joins make for simple setup/teardown.

- Three big pockets
- Has ventilation window
- Locking flap
- Weighs 6½ pounds

Restop.com
$126.50

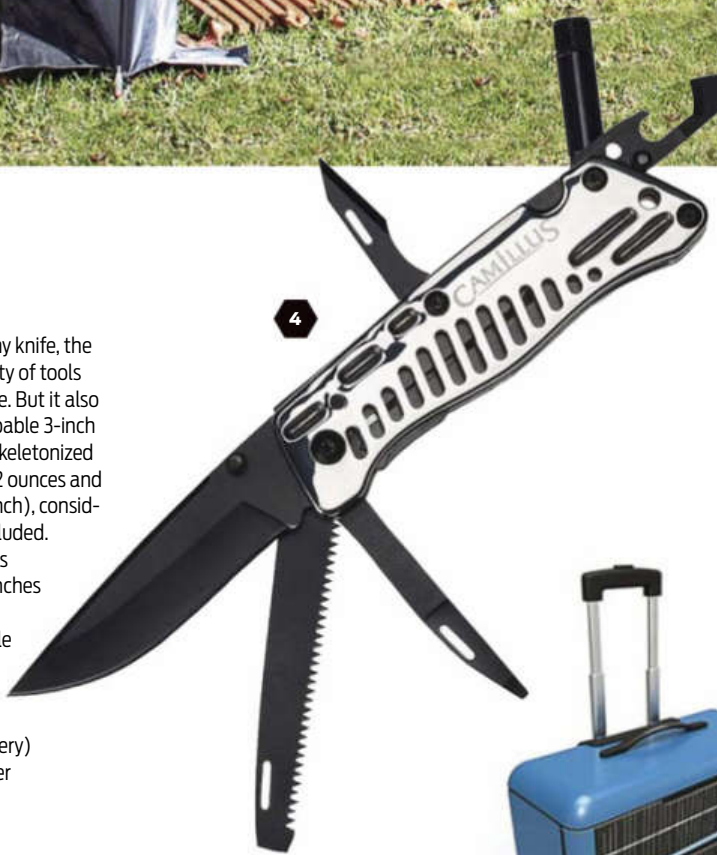
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Camillus Trekus Pro

Much like a Swiss Army knife, the Trekus Pro has a variety of tools tucked into the handle. But it also comes with a very capable 3-inch blade. The handle is skeletonized to cut down on the 7.2 ounces and is very thin (only 0.7 inch), considering how much is included.

- Blade length: 3 inches
- Overall length: 7.25 inches
- Weight: 7.2 ounces
- Stainless-steel handle
- Drop-point blade
- File/screwdriver
- Awl
- Flashlight (with battery)
- Removable fire starter
- Saw
- Bottle opener
- Wire cutter

Camillusknives.com
$43.99



6

Anywhere Fridge

If you're looking for a portable refrigerator-and-freezer combo, this is it. The Anywhere Fridge can be charged either via solar panels or by plugging it into a standard outlet (including car charger). It collapses for storage or to tote around—which, by the way, can be done easily, thanks to the wheels and retractable handle, like a suitcase.

- Runs on battery at night
- Powdercoated steel exterior
- Weather-resistant

Anywherefridge.com
Starts around $600



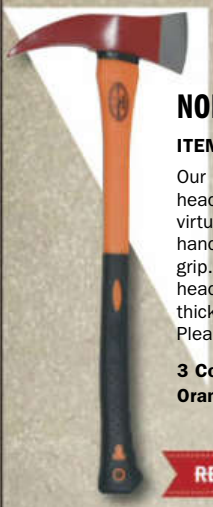


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ITEM #08-1091

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1	Zucchini
1	Tomatoes
1	Peppers
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4	Corn
4	Green Beans



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~~Contents:~~	
1	Information Sheet
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10	Snack Items
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1	50 Hour Candle
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NEW 11.15 PRODUCTS



7

7 Mini Water Filter

Getting safe drinking water just got more compact. The MINI can be attached inline on a hydration pack, on a regular soda bottle, or to the collapsible drinking pouch that's included, or you can use the drinking straw that also comes with the kit in order to sip directly from the water source. It removes almost 100 percent of all bacteria (we're talking salmonella, E. coli, and more).

- Palm size
- 2 ounces
- Cartridge life is up to 100,000 gal.
- Made of hollow fiber

Sawyer.com
Around $25



8

8 Lantern

The Helix Backcountry lantern is not only lightweight and compact, but it also has a button-free control surface. It offers 150 lumen white mode that can be dropped to 30 lumen, and there's also a low-profile red mode. For the ability to shine over a wider area, there are expandable legs, and the globe itself can be extended or compressed.

- Expect 32 hours
- Takes 3 AAA batteries
- Around 5 ounces

Princetontec.com
Around $30

9 All-in-One Survival Kit

The ESG Essentials All-in-One kit has just about everything you need to handle any situation. There's a power kit, hygiene kit, water filtration kit, and civil unrest kit, which means you get things such as rechargeable batteries, first-aid products, a water-filtration system, and a knife and baton.

- There are organizer bags
- Includes patches for easy bag ID

Brownells.com
$379.99



9


DARKNESS
IS COMING
Fire, flood, hurricane, tornado, earthquake, terrorism, nuclear/biological/chemical, destruction, panic.
These disasters present lethal challenges in daylight. They are compounded by darkness. Are you ready?
TNVC is the only place to obtain all the necessary low light and no light gear to not only survive, but endure and prevail when disaster strikes. Don't be caught in the dark!
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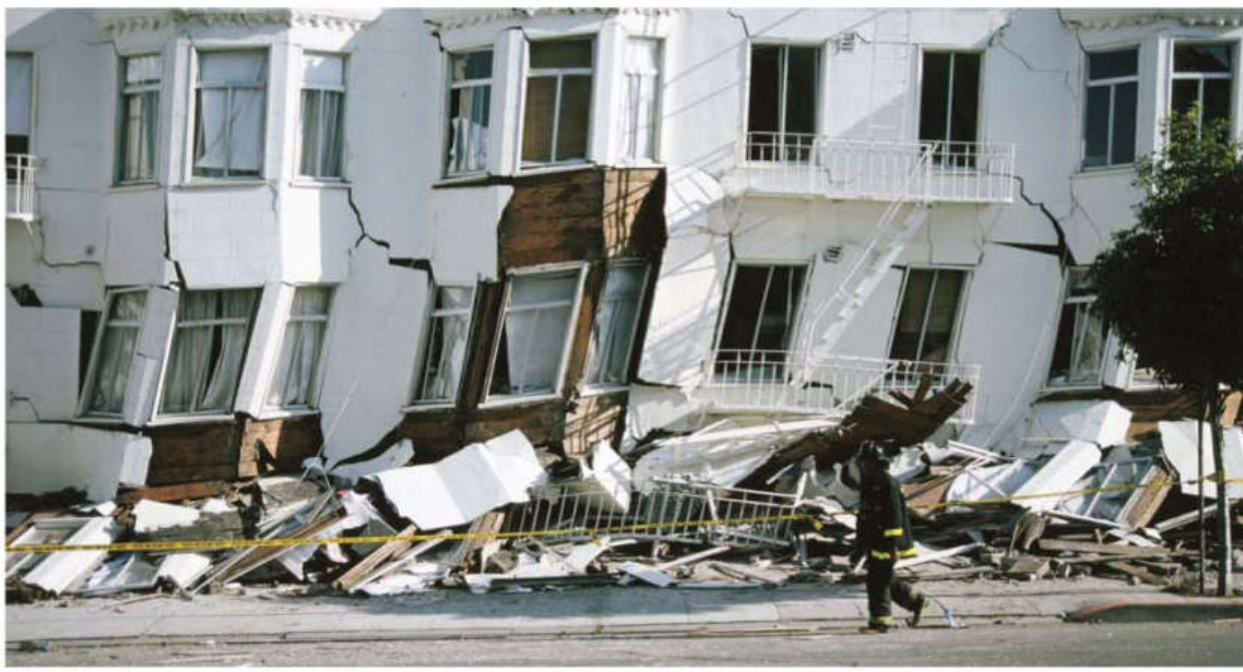


PHOTO BY DAVID L. RYAN / GETTY IMAGES

Natural Hazards Engineering Center Coming

ENGINEERING BUILDINGS to handle natural disasters such as earthquakes? It might happen, thanks to a $13.7-million grant from the National Science Foundation (NSF). The Cockrell School of Engineering at the University of Texas at Austin will build a resource-sharing Web platform that will allow for computer models and simulations of natural hazard, and will contain a data repository and tools for making stronger buildings, levees and more. The grant is part of the NSF's new Natural Hazards Engineering Research Infrastructure program.

Driverless Cars Hit a Hidden City in Michigan

YOU PROBABLY KNOW by now that Google is one of the companies testing automated/driverless vehicles in the real world. You might have also heard about some fender-benders and maybe are a wee bit freaked out about this whole driverless situation on public roads. You can rest easier now: The University of Michigan has set aside 32 acres for the Mcity Test Facility, a self-contained place for evaluating and testing driverless, as ,well as connected vehicles. You see, it simulates the real world—right down to having multilane roads, tunnels, curves, concrete, asphalt, dirt, traffic control devices, crosswalks, street lighting, sidewalks, buildings and more.

FACTOID

76 percent

of emergency personnel in North Dakota are volunteers. So says the state Department of Health, according to the *Grand Forks Herald.*

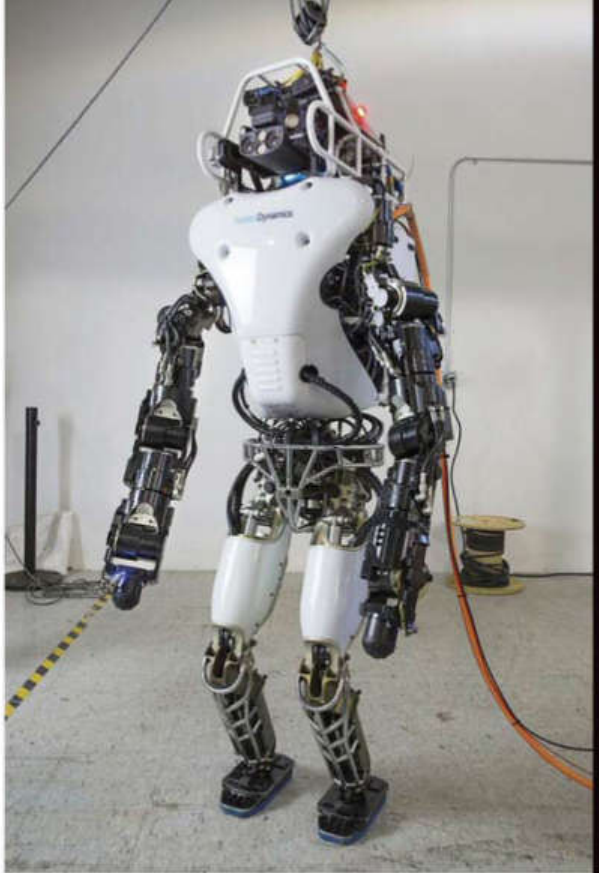
Law: Okay to Break Into Car to Save a Pet



TENNESSEE'S HB 537 IS LAW, allowing a person to be free from liability for damage by breaking into a locked vehicle to save a child in danger. But an amendment just added the same protection for if you are saving an animal trapped in a car. As it stands now, only law enforcement is generally allowed to break into a vehicle in every other state.

“While there are no suspected or confirmed cases of Ebola in the Caribbean, the exercise was very useful, and we now know that if there was to be an imported Ebola case in the region, our public health systems are ready to respond in a way that is rational and effective.”

—DR. BABATUNDE OLOWOKURE, DIRECTOR OF SURVEILLANCE, DISEASE PREVENTION AND CONTROL AT THE CARIBBEAN PUBLIC HEALTH AGENCY, TO *CARIBBEAN NEWS NOW!*, REGARDING AN EBOLA SIMULATION EXERCISE CALLED “EXERCISE HUMMINGBIRD,” CONDUCTED WITH 13 MEMBER STATES.



DARPA Robotics Challenge

IN A COMPETITION worth $3.5 million in prizes, 25 teams from seven countries competed in the Defense Advanced Research Projects Agency’s DARPA Robotics Challenge. The call to action was for robot systems and software teams to develop robots that could help humans respond to disasters. Teams had to quickly develop hardware, software and human-machine interfaces that could accomplish tasks determined by DARPA that would involve mobility, dexterity, perception and more. The winner was Team Kaist from the Republic of Korea; the team won $2 million.

How You Spent Your Summer Vacation: NSA Camp

IF YOU HAVEN’T HEARD of GenCyber, you probably didn’t spend your summer vacation at one of the summer camps that is a partnership between the National Security Agency (NSA) and the National Science Foundation. The goal was to have middle and high school students get “schooled” in the idea of cybersecurity problems, prepping them with ideas for things to study in college. Some camps were overnight. By 2020, the hope is that the number of camps will grow from 43 to 200.

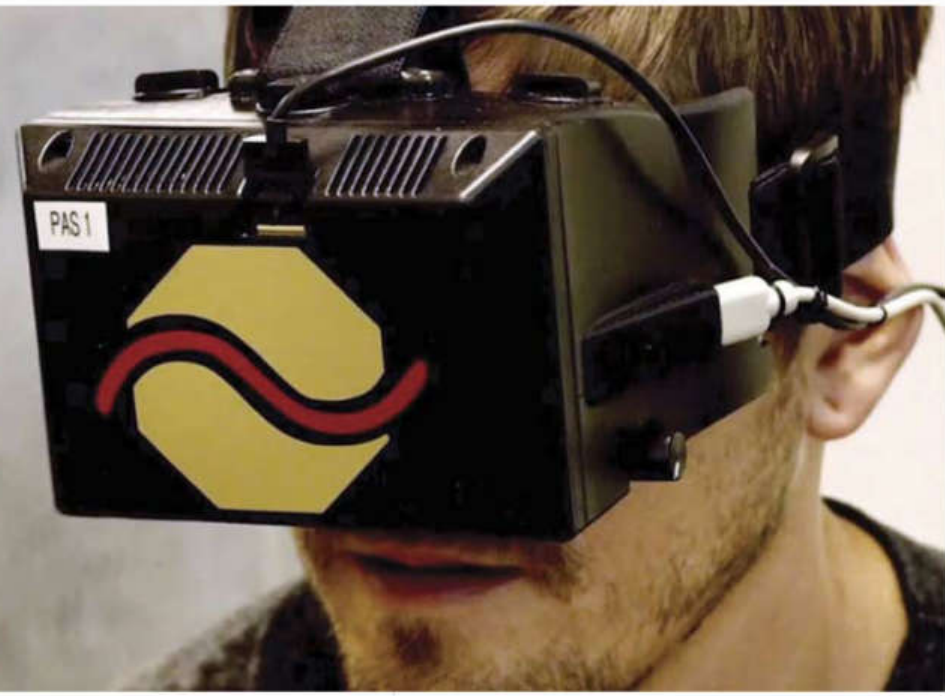


Most Visible Color to Wear in Water?

MUSTANG SURVIVAL did a study called *On-Water Visibility*, and the goal was to figure out which color is the most visible floating on water, “because we simply didn’t know,” said lead researcher Wendell Uglene, who is also the research manager for Mustang Survival. Turns out, a fluorescent green immersion suit popped more than orange, red and yellow, especially in low light.

NEWS & NOTES 11.15

Concussion Goggles Being Tested



University of Miami doctors and software company Neuro Kinetics have developed concussion-detection goggles, funded mainly by a $500,000 grant from the NFL, Under Armour, and GE, plus the Department of Defense. There's an eye-tracking and stimulus display that can detect brain injury by measuring eye movement and speed and symmetry of pupil dilation, according to the *Miami Herald*. That info makes it possible to determine where exactly the injury is and if an athlete can keep playing or needs medical help. The goal is to develop three types: one for youth sports, another for college and pro sports, and a third, the costliest, for use by physicians, such as for concussion treatment.



U-Haul Partners with Red Cross

U-HAUL HAS OFFICIALLY become a Red Cross Disaster Responder, which gives Red Cross access to U-Haul trucks, equipment, and storage in an emergency situation. U-Haul has helped Red Cross before with relief work, like Hurricane Katrina, by sending trucks with supplies and giving free self-storage to victims.

Schools to Get Body Cameras



PHOTO BY GETTY IMAGES

LOOKS LIKE A SCHOOL district in Iowa may be the first to use body cameras. It would allow administrators to record their interactions with students—and parents. Likely only principals and assistant principals will sport them, not the teachers.



Spanish-Language Hurricane Website Launches

FLORIDA INTERNATIONAL UNIVERSITY'S International Hurricane Research Center, working with the National Oceanic and Atmospheric Administration's National Hurricane Center, now has a Spanish-language website, huracanes.fiu.edu, with info on hurricane science, prep, and advisories. It's to help the Spanish-speaking community become better informed and educated about hurricanes.

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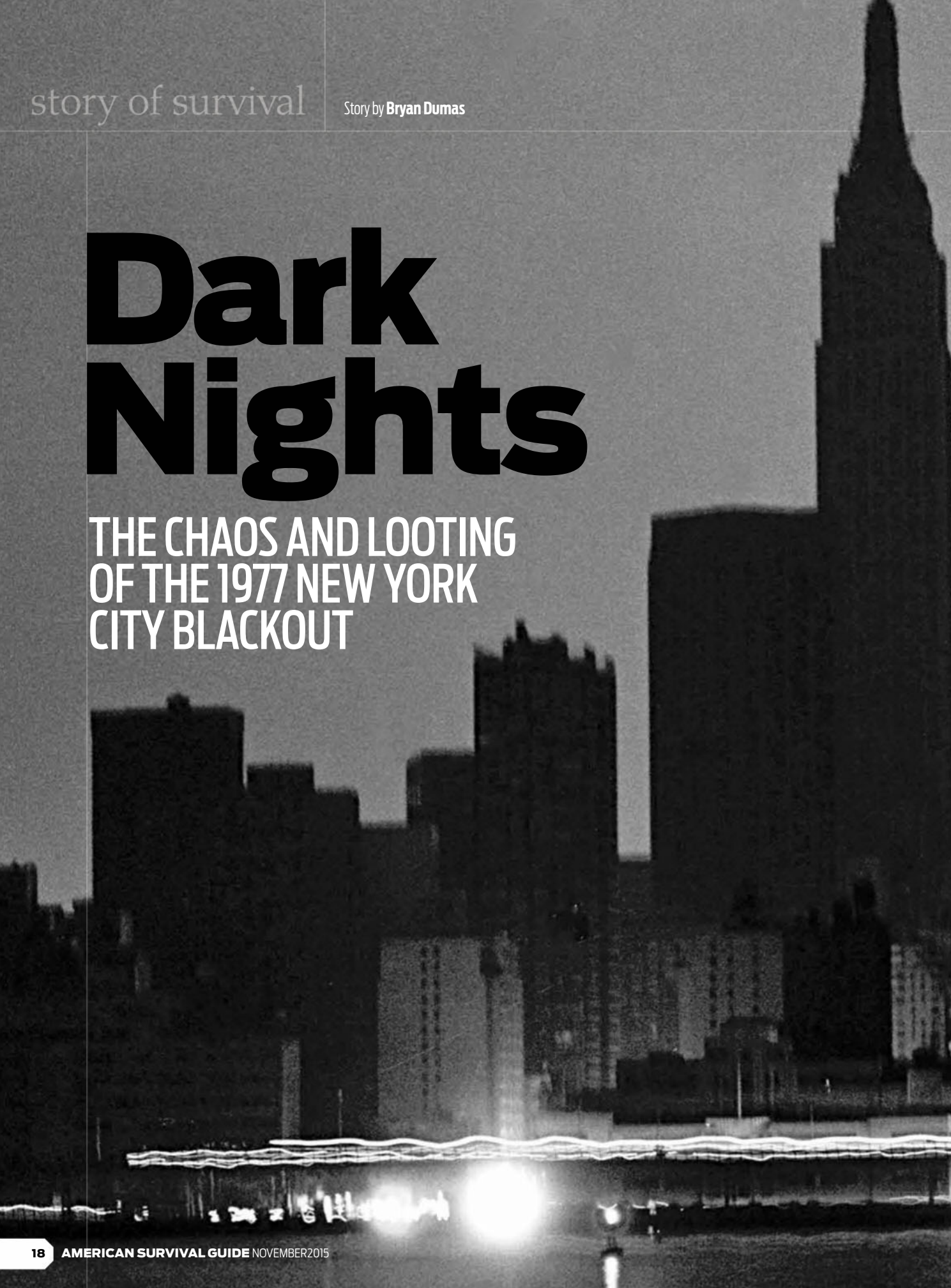
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Story by **Bryan Dumas**

Dark Nights

THE CHAOS AND LOOTING OF THE 1977 NEW YORK CITY BLACKOUT



9:34 p.m. Darkness descends upon New York City.

It has been a normal Wednesday evening for millions of New Yorkers. Commuting home from a late night at the office, wrapping up a PTA meeting, or ducking out of the heat and into a movie theater, the city had settled into its routine. Suddenly, as if someone flipped a switch, all the lights went out and the city soon spiraled out of control.

"It's the whole goddamned world!" one New Yorker exclaimed.

Or so it felt for many New Yorkers on a hot July evening in 1977. Unlike the 1965 Northeast blackout, the one that plunged New York into darkness this time was limited to the boroughs of the city alone. And alone, the city would be forced to come to grips with a night of violence, looting, and social disorder.

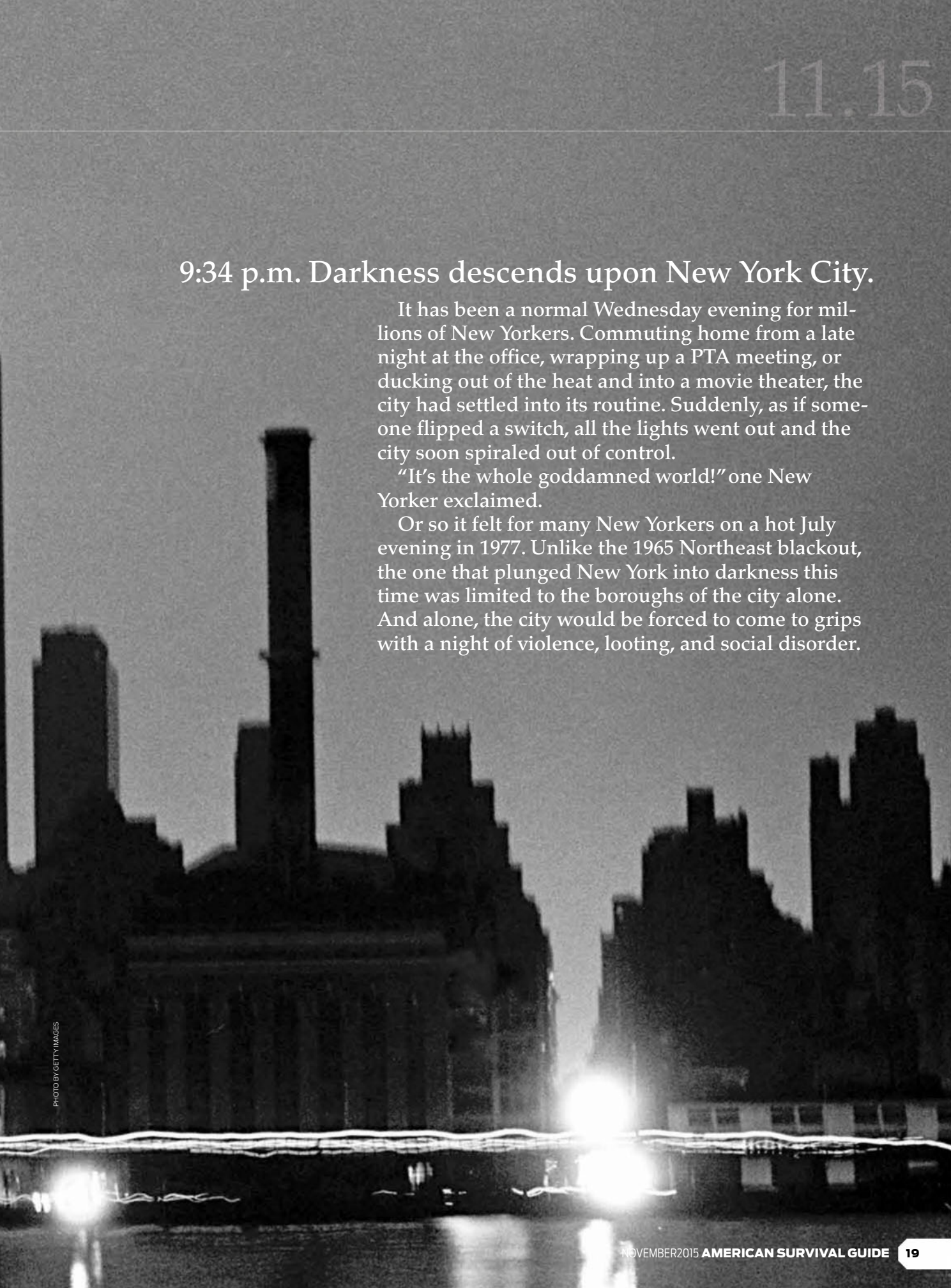
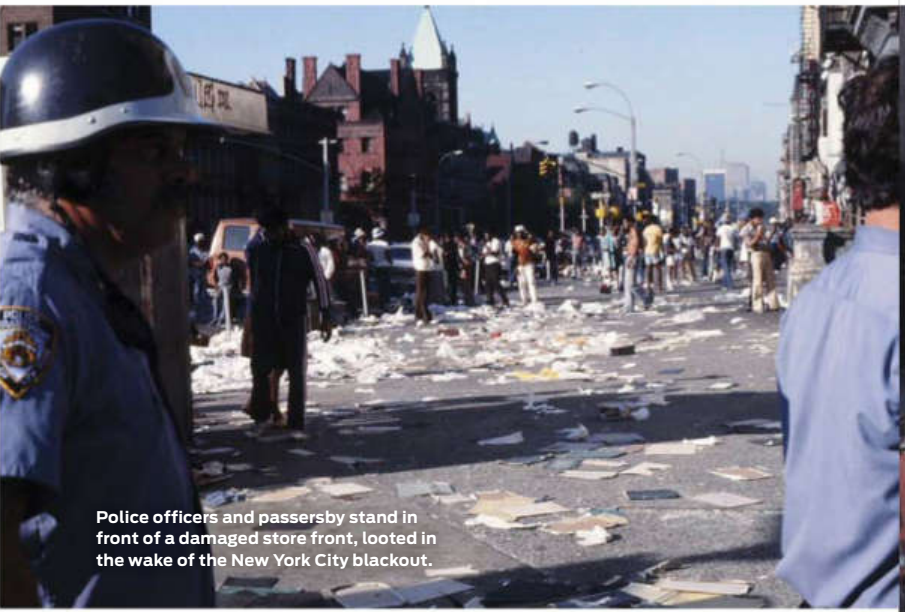
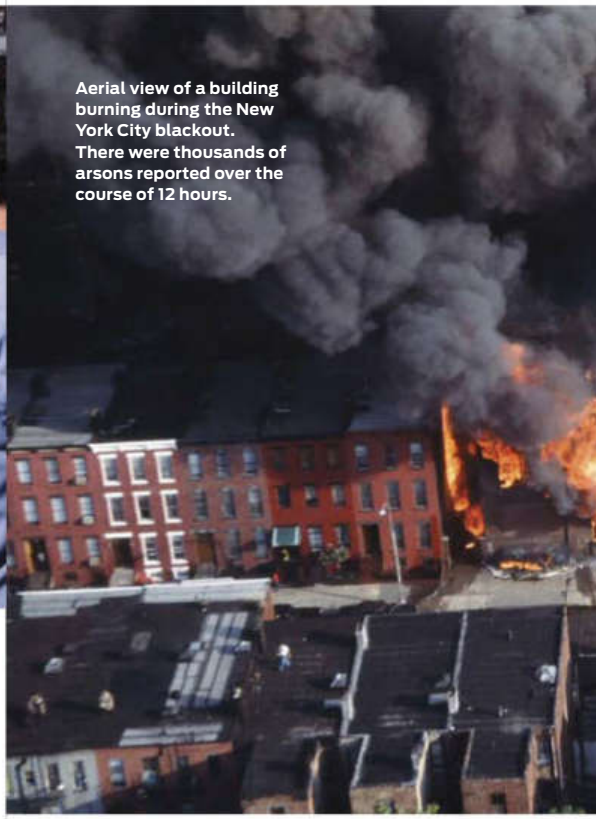


PHOTO BY GETTY IMAGES



Police officers and passersby stand in front of a damaged store front, looted in the wake of the New York City blackout.



Aerial view of a building burning during the New York City blackout. There were thousands of arsons reported over the course of 12 hours.

PHOTOS BY GETTY IMAGES

"IT ONLY TOOK AN HOUR BEFORE THE REPORTS FLOODED INTO POLICE PRECINCTS: STORES ON ENTIRE CITY BLOCKS WERE BEING WIPED CLEAN."

Heart of Darkness

"It was a holiday atmosphere," one person recalled of the moment the lights went out. But the holiday atmosphere quickly dissolved.

In contrast, in 1965, the lights went out around 5:30 on a cool November evening, and many people came out into the streets, shared meals and stories, candles and flashlights, kinship and civility. Many people thought the same would happen this time around.

"The '77 blackout was a disaster. I still lived in the same place as I did in '65. Prior to it occurring, that event had always been mentioned as evidence of New Yorkers' basic civility and ability to pull together under pressure and was even remembered as a fun event," another person said.

By 1977, New York was a different place. There was a seething animosity lurking just a scratch beneath the surface. Within an hour, parts of New York City looked like a war zone. In Brooklyn, Fifth Avenue was aglow from fires burning in garbage cans on nearly every corner. A few men, who, minutes earlier were helping people get home, were now desperately trying to steer them away. They stood on President Street and direly warned people to turn onto Fourth Avenue.

The 1977 Blackout by the Numbers

3,776
people arrested

1,616
stores looted or destroyed

1,037
arson-related fires

12
hours the power was out

3,800
megawatts of power needed

When questioned, they simply answered, "They're shooting up there. Don't go no further. Make sure you turn here."

Mayor Abe Beame quickly declared a state of emergency, and extra police and fire fighters were dispatched across the city. But it was too late. Roving bands of marauders took to the streets in a wave of violence and destruction not seen in the city since the 1968 Martin Luther King Jr. riots. What began as neighborliness swiftly devolved into an orgy of looting and arson.

A raucous cry of, "It's Christmas time! It's Christmas time!" echoed through the city as people began to pillage store after store. But for the mayor and many citizens of New York City, it was "a night of terror."

'Carter Is Not Giving Us What We Want'

"Everyone's got a little thievery, a little wrong in them," said Willis Barnes in an interview for Robert Curvin and Bruce Porter's study of the blackout that was published in 1977. "There was a lot of fear mixed with excitement. A lot of people didn't know what was going on, but when they saw all the looting, they got it on, too."

It only took an hour before the reports flooded into police precincts: Stores on entire



city blocks were being wiped clean. On Broadway in Brooklyn, on Flatbush and Utica, in midtown and in the Bronx, if it wasn't nailed down, it was walking out with someone. What was not being looted was set aflame.

Under cover of darkness from the night and the blackout, bands of criminals set out to loot what they could. And what they wanted was only the best.

"When it's dark, you take everything you can get," Jackie House, aged 16, said. "Who wants to buy sneakers for $24? [President] Carter is not giving us what we want. He ain't giving us nothing. So, we have to take it."

"The street people were the first ones out," NYPD Lieutenant Matthews said. "And as it progressed later and later, others got involved. If you weren't criminally inclined, your first inclination that night was to go and see if your family was OK and then go out on the street."

According to Curvin and Porter, within the first hour of the blackout, stores selling high-end, easily fenced merchandise were the first ones targeted. Ace Pontiacs in the Bronx saw 50 new cars stolen; men and women lugged furniture, televisions and stereo equipment into trucks—often the same ones used to rip the steel grates from the storefronts.

PHOTO BY THINKSTOCK

ACTS OF GOD: Why NYC Went Dark

Consolidated Edison (ConEd)—the utility New Yorkers love to hate—was singled out by Mayor Abraham Beame as the sole reason for the 1977 blackouts, citing "gross negligence" on its part for the blackout that caused so much looting, arson and violence in the city over the span of 12 sweltering hours in July. Con Ed chairman Charles Luce cited "acts of God" and the unpredictable and highly improbably quadruple strikes of lightning hitting the exact wrong spots each time. Either way, New York went dark, and all hell broke loose.

A severe thunderstorm swept across Westchester (north of the city) on the evening of the blackout—just as 9 million electrical users were switching on their air conditioners to do battle with the hot, humid night. Estimates place the demand on the system at around 3,800 megawatts of power. To cope with this, ConEd was drawing power from various networks, including New England and Pennsylvania.

Around 8:30, lightning in Westchester knocked out about 900 megawatts from the system. Controllers with ConEd scrambled to make up the power loss. If that had been it, the system would have maintained itself, and a crisis would have been averted. However, 20 minutes later, two more lightning strikes took out two 345-kilowatt lines that brought power from upstate New York and New England. Another lightning strike three minutes later reduced ConEd's supply by 2,000 megawatts. For ConEd, that was the beginning of the end.

After the 1965 blackout, procedures were put in place to protect power plants and transmission lines from failure. Systematically, outside providers in Pennsylvania, Long Island and New Jersey began to sever themselves from the failing grid. ConEd operators tried to "shed power" (that is, reduce the demand by cutting off power to certain areas). However, by 9:30, the last power station, "Big Allis," located in Queens, shut down. With it, all of New York went dark.

Could something like this happen again? When dealing with a system with a large number of components and variables—and adding in the uncertainty of weather—the numbers say "yes," and history proves this: In 2012, two major storms, one on June 29th and then Hurricane Sandy in October, darkened 3.8 million homes and businesses from Indiana to North Carolina, along with more than 8 million others along the Eastern seaboard.

And weather is not the only culprit. Speaking to *Fox Business* in 2013, Massoud Amin, professor of computer and electrical engineering at the University of Minnesota, pointed out that U.S. power control stations see as many as 100,000 probes by hackers each day. What this means is that outside sources are mapping out the U.S. system, searching for any and all flaws to exploit and possibly darken more states than any natural disaster could manage to do. However, many cyber experts believe that such an attack would require resources beyond what most hackers could muster and that only major powers such as Russia or China could conceivably launch such an attack on the electrical grid. And, they ask, why would they?

Nevertheless, despite building a smarter, stronger grid, the United States and Canada are, and will be, prone to large blackouts each year.

WHY THEY LOOTED

»The 1977 New York City blackout stands out as an anomaly when it comes to the levels of violence, looting and destruction if compared to the 1965 and 2003 Northeast blackouts.

Why?

What drove New Yorkers into such a frenzy in 1977 but found them reveling in civility and general neighborliness in 1965 or 2003? The numbers, alone, show the disparity: Five arrests for looting in 1965, 250 blackout-related arrests in 2003, as compared to 3,776 people arrested, 1,616 stores looted or destroyed, and 1,037 arson-related fires in 1977. So many people were arrested then that the city had to open the Tombs, a prison the federal government declared so decrepit in 1974 that it was abruptly shut down.

The first possible reason for the differences could be attributed to timing. The 1965 and 2003 blackouts both struck in the late afternoon (5:30 in 1965 and just after 4:00 in 2003), leaving many business owners still at their stores and able to keep an eye on them. The 1977 blackout struck in the late evening (9:30). By then, the stores had been empty for hours. Also, when the blackouts occurred earlier in the day, NYC government officials were able to quickly muster the resources needed to maintain peace in the city, and most New Yorkers were still at work or trying to get home.



PHOTO BY GETTY IMAGES

A deeper cause lies with the state of the economy at the time of the blackouts. For the most part, the economies of the late 1960s and early 2000s were fairly stable across all economic and social classes. This was not the case during the late 1970s. America was mired in a deep, lasting recession. Some may remember President Ford's "Whip Inflation Now" buttons—as though that would stop the economic crisis. And that was part of the problem: Americans felt helpless and hopeless and believed that the country was falling apart.

This was especially true in blighted urban centers such as New York. High unemployment, skyrocketing inflation and racial unrest swirled into a tempest of violence and looting.

"They were just waiting for something like this so they could go berserk," Lydia Rivers told *Newsweek* in 1977. Another man said, "It's a chance for us to let our frustrations out."

That malaise and animosity could comprise the final cause. In 1965, and again in 2003, New Yorkers felt, according to *Slate* magazine, a sense of ownership in their city and in their neighborhoods.

"Large numbers of immigrants, who have a stake in their businesses and communities, have changed the face of the city's neighborhoods. A virtuous cycle has taken hold [in 2003], in which civic pride has led all manner of New Yorkers to care about their city."

That civic pride was missing in during the 1970s. We can only hope that that pride does not disappear across America by the time of the next great blackout.

After the high-end items were taken, the rest of society began to pick through the remainders. But these people went out seeking the day-to-day necessities. They targeted supermarkets, furniture and clothing stores. In 1977, America was in the grips of a deep recession, and many residents of New York—the "stable poor and working class"—were on tight budgets. These things would be used to furnish their homes and feed their families for another week.

For some, the idea of looting was more of a notion not to be left out of the action.

"It seemed almost a matter of principle that they take something that night," Curvin and Porter remarked.

One policeman from Bedford-Stuyvesant's 77th Precinct found a shopping cart on the sidewalk with a five-foot-long slab of meat, still mostly frozen. He later recalled, "It was as if the guy who'd stolen it suddenly said to himself, 'What the hell am I doing with this?' and so, he left it there."

All told, 1,616 stores suffered some sort of damage that night, and the fire department responded to 1,677 fires of the more than 3,700 reported.

Colorblind

For the owners of the 1,616 stores, it was all a matter of timing. Bad timing.

When the 1965 Northeast blackout struck, most store owners were just closing their shops, so they stuck around to keep an eye on things. However, the 1977 blackout struck at 9:30 p.m. and caught nearly every store empty and locked down for the night and the owners gone to their Rockland County or Long Island homes.

As long as what the looters wanted was locked away behind steel gates and barred windows, who owned the store did not matter. In a few instances, they knew exactly from whom they were stealing.

This was the case of the Fort Greene Cooperative Market. It was set up in 1968 by a number of black members of the community as a means to help the neighborhood find a market that offered lower prices and quality goods. Emile Curry, the store's chairman, believed that his store played a positive role in the community and wanted to portray that trust by not installing metal gates across its plate glass storefront. It was a fatal mistake.

"The store was broken into within minutes" of the lights going out, he said. "I thought we had deep roots in the

community." Adding insult to an already horrid outcome, the Finast market down the street went unmolested, because the steel gates protecting the store were too tough for the looters to pry apart.

Across town, on Columbus Avenue near 94th Street, Furniture and Things, a store opened by two enterprising black men, Stanley Armstrong and Frank Prescott (who received the second Small Business Administration loan ever given to a minority in NYC), looked at their demolished store. Looters had smashed through the front windows in a frenzy of rage and lust. What they could not carry out they destroyed: A chandelier was shattered, and couches and chairs were torn apart by knives. All the while, the residents in the floors above did what they could to deter the looters. They poured water on them and tried to scare them away with flashlights.

In the end it was not enough, and Armstrong and Prescott were ruined.

"I just don't know what to do," Armstrong said. "I'm not a gun man. I don't own one, and I wouldn't know how to use one if I did have one. But I can't even get the private security agencies on the phone, and I know the cops won't be able to guard the store."

Even if Armstrong had had a gun, it probably would not have made a difference. In Harlem, Simon Furniture Company's owner, Eugene Riback, stood behind four armed security men with guard dogs pulling tight on their leashes amidst the looted remains of his store. Despite the menace confronting them, two thieves dashed in and began to haul away a washing machine. When one of the guards pointed his gun at the thief's head from just three feet away, the looter stared down the barrel and growled, "You either kill me, or I go out the door with the washer." The guard put the gun away, and Riback watched the washer go out the door.

Ice Was More Valuable Than Gold

As dawn broke, it was more than just the store owners who had to make the best in a tumultuous world.

Time magazine reported seeing a young woman wandering the streets in East Harlem. She was desperately seeking out any store that had not been looted. "I'm trying to buy some bread," she said. "I can't find none."

Across town in Brooklyn, 70-year-old Rose Stevens wept as she wandered outside the burnt remains of her apartment above a meat market the looters had set on fire. "I wish I died," she lamented. "I have no place to go."



The blackout quickly brought to the forefront New Yorkers' dependency on a stable, reliable electrical grid. By the morning of the 14th, many people were just getting home after finding themselves stuck on the subway or in elevators. When the power went out, so did their air conditioners, freezers and televisions. A lucky minority was able to rely on battery-powered radios to keep current about the news, but many found themselves in a foreign world—a world without the drone of air conditioning or chatter on the television.

Worse still, people on the upper floors of high-rise apartments were without water, because the pumps depended on electricity. Most of those residents decided to sleep in the lobbies of their buildings instead of climbing the daunting flights of stairs in the dark. Some neighborhoods erupted into spontaneous block parties as people began to realize their food would spoil in the freezers. For them, ice was more valuable than gold.

In some ways, the spirit of the 1965 Northeast blackout prevailed, but New York became a changed city after the 1977 blackout. Many neighborhoods became a blighted sore as store owners abandoned the area, thereby leaving people without jobs or services.

One thing many New Yorkers learned was that they needed to be better prepared for the future. With an ever-increasing demand on an aging electrical grid, it is not a matter of if, but when, the next massive blackout strikes a major metropolitan area. ■■■

PHOTOS BY GETTY IMAGES



(above) **Solomon Altheim looks over the wreckage at his shoe store at 104th Street and Third Avenue after it was looted.** (top) **Police officers and passersby stand in front of a damaged store front, looted in the riots.**

DEAD ZONE

HANDLING AND DISPOSING OF DEAD BODIES AFTER A CATASTROPHE

Story by **Ryan Lee Price**

IT'S THE FOURTH MONTH OF THE EPIDEMIC. The news from your shortwave radio announces that the death toll around the world has reached one billion people. You, your family, some neighbors, and close friends have escaped the worst of it by bugging out to a compound of remote cabins deep in the woods.

Besides the 28 of you, you haven't seen a soul since you left the city. Two weeks ago, your neighbor's teenage son went missing but turned up three days later with symptoms of the epidemic. It spread quickly through his family before they could be isolated. By the next week, they were dead, along with six others. The remaining survivors don't seem to be infected, but with death comes bacteria, infection, disease. There are 11 bodies slowly decomposing in one of the cabins that need to be dealt with.

It's time to bring out the dead. But how?

PHOTO BY GETTY IMAGES



"DEATH ISN'T PLEASANT, IT WILL NEVER BE PLEASANT, AND YOU'LL HAVE TO PREPARE YOURSELF FOR IT."



"IN THIS SITUATION (AND MANY LIKE IT), THE BODIES YOU WILL ENCOUNTER WILL MOST LIKELY BE DAMAGED IN HORRIFIC WAYS. THERE WILL BE FLUIDS, SMELLS, SOUNDS AND SIGHTS THAT WILL LIVE WITH YOU FOR A LONG TIME."

WHAT TO EXPECT

Being exposed to human beings who have died of unnatural causes is not a normal part of the human experience. People with access to hospitals and funeral homes have become unaccustomed to the tasks of handling dead bodies. In a survival situation in which death has occurred, you might have to touch the remains of a human, move them, and perhaps hear the brittle sounds of rigor mortis or of built-up gases escaping. These are not normal situations, and it will take some mental fortification on your part to overcome (see the sidebar on the Page 27).

Death isn't pleasant. It will never be pleasant, and you'll have to prepare yourself for it. In this situation (and many like it), the bodies you will encounter will most likely be damaged in horrific ways. There will be fluids, smells, sounds, and sights that will live with you for a long time. The discovery, removal and burial of these bodies will not be a tidy job, especially if you lack a few of the basic materials, such as gloves, body bags, tarps, etc.

Although it might be difficult to restrain your empathy for a once-living person now lying dead before you—especially if he or she was a loved one—there is an important task at hand that must be dealt with quickly and properly. Survival is messy. It is best to get it over with before it gets even messier.

ORGANIZATION

You are about to undertake an unpleasant activity. For a variety of mental and physical reasons, this will be difficult. Preparation is key. The better prepared you are for this, the quicker it will get done and the easier it will be. Ideally, you will have particulate masks, latex gloves, and body bags (or large garbage bags) to deal with the remains. This is why these things should be packed in your emergency bags. If available, have a camera to document the situation, a pen and paper to make notes and to record names, and boxes or envelopes to store personal belongings.

You'll need to make a plan with the remaining survivors. Graves will need to be dug, personal items collected, names and information recorded. Bodies carried. You can't do it alone. Delegate responsibility to keep as many people busy as possible and their minds off what is actually happening.

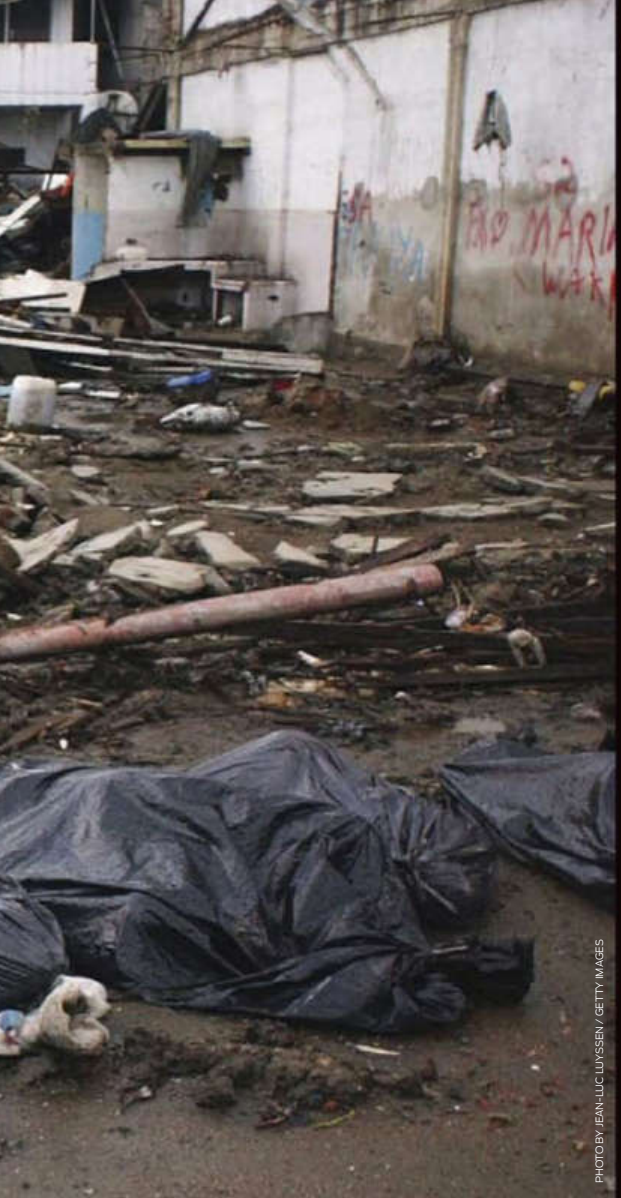


PHOTO BY JEAN-LUC LUYSSEN / GETTY IMAGES

RECOVERY

There is a huge psychological burden on the survivors whenever dead bodies are left in view. Survivor's guilt plays a huge role in a post-catastrophe situation, so removing the bodies as quickly as possible should be your number-one goal after medical aid has been provided to the injured and the safety of the rest has been ensured.

Organize search-and-rescue teams if need be: one team to locate the bodies and another to transport them to the identification/burial site. Ask questions of those who survived: Who is missing? What are their names? Where were they last seen? What were they wearing? Try to make an accurate list of potential victims and where they might be.

Masks, work gloves, heavy boots, latex gloves, and tools might be needed to locate the bodies. Protect yourself from touching the bodies, and wash any exposed skin if you do. You might also

WAYS OF MENTALLY COPING WITH DEAD BODIES

»Being exposed to dead bodies will provoke thoughts and feelings you might not have had before. You might experience sorrow, regret, repulsion, guilt, disgust, anger, and futility. These are normal responses to an abnormal situation and should be expected. In fact, it would be surprising if you didn't experience at least one or more of these emotions.

Particularly stressing—especially after the trauma of surviving a tragic ordeal—is coming into contact with the bodies of people who have died under horrible circumstances. In some situations, the bodies you are recovering may be distorted and mutilated, and it is likely you will come across mere parts of bodies. You might be overcome with feelings of innate empathy; so much so that it might hamper your ability to persevere.

Witnessing these scenes will invoke an unnatural horror in most people, but surprisingly, most of us can quickly form a tough mental barrier that will protect us from the emotional trauma.

Prepare yourself: Tell yourself that you will see some disturbing things. The sights, smells, and sounds will stay with you for a long time. Try to focus on the fact that a body is not a person; it can no longer feel suffering or pain.

Place value in your actions: You are doing a good thing. You are helping the next of kin know their loved ones received a respectful burial, full of as much dignity as possible. You being there will provide loved ones with facts about their death and burial, so there is no lifelong, lingering doubt about their fate. Most importantly, you are providing a healthier environment (mentally and physically) for those who are still living.

Limit your exposure: Use objects to block the view of the body. Covers, bags, tarps, blankets—anything that will keep you from seeing the dead body—will help you disassociate yourself with what you have to do. If those aren't available, gloves, a mask, and safety goggles or glasses should insulate your senses. Think of it as a wax model or a mannequin or that you're moving something innocuous, such as luggage. If you need to, mask the odor with disinfectants or air fresheners, but don't use perfumes or lotions (they don't work, and you'll forever associate that smell with a dead body).

Consider the still-living: Take frequent breaks away from the body recovery area. Eat and drink well. Wash your exposed skin frequently, and try to maintain good mental health. Talk through your issues with others. Be aware of signs of distress in your fellow survivors. Offer support and encouragement. Believe it or not, gallows humor is a perfectly acceptable way to cope with exposure to dead bodies. Mind your tact, however, and don't make your humor personal, gross, or disrespectful of the bodies.

Post-Traumatic Stress: After the burial task is completed, you will feel a variety of emotions; most specifically, that there was nothing you could do to prevent their death or that you weren't able to give each burial the "funeral" it deserved. These are normal feelings, and they might surface years later and at random times. Do not withdraw inside yourself, thinking those feelings will go away or that you are alone in experiencing them. Seek out someone to talk to about your feelings, especially other survivors.

Death by the Numbers

56 million
number of people who die every year worldwide

2.5 million
number of people who die every year in the United States

9
percent of deaths caused by injury

394
average number of natural disasters each year

107,000
average number of people killed each year in natural disasters

53
percent of victims of floods, worldwide

143 billion
average annual cost of natural disasters (in dollars)

come across pieces of bodies that will need to be dealt with, and you shouldn't spend time trying to match up the parts with the owners.

When you find a body, it is best to place it in a body bag or wrap it in a tarp or sheet. This mentally distances yourself from the physical act of moving a dead body, especially if you are already traumatized by the event that killed the person to begin with. Additionally, a body bag keeps all the personal effects in one place. Use gloves and avoid touching the dead body. If you have to, make sure to wash your hands well afterward.

Make note of the location and time that the body was found. If possible, take pictures for the next step: identification.

IDENTIFICATION

It is important to keep accurate records of the bodies you have recovered. Hopefully, the emergency situation will be resolved soon, and when it does, loved ones and the government will want to know the circumstances of the burial. There are legal ramifications involved (taxes, inheritance, insurance). Additionally, the bodies will need to be interred and reburied properly in an official cemetery.

The sooner you are able to identify the bodies, the quicker they can be buried (or sent to a cold storage facility).

Reference number: Start by assigning a unique identifying number to each body and to each found body part. The numbers should be sequential and should not repeat. Treat body parts like individual bodies and give them a unique number, because they can be used to identify a person if the whole body cannot be found.

Label: The number should be written on waterproof paper or sealed in a small plastic bag and either attached to the body or kept in its container (body bag, tarp, etc.). Make note of the number as it associates to a body, and then include any information you have about where it was found and who it might be.

Photographs: If possible, take a series of good-quality photographs of the bodies. Include in all pictures the identifying number associated with each body. The list of photographs for each body should include the following: a full-length body shot, the whole face (if the face is dirty or bloody, do your best to clean it first), any obvious distinguishing features, all clothing, shoes, and personal effects. Are there any tattoos or scars? Take a picture of these, as well.

Record: Gather the body's personal effects—watches, wallets, purses, jewelry—and place them in an envelope or a box clearly marked with the body's unique identifying number. Make note of the body's gender, race, facial features, age range, and marks on the skin (tattoos, etc.). Ideally, it would be good if a copy of this information were kept with the body, but, if not, it is very important to preserve this list for the authorities and next of kin.

Storage: The personal effects should remain with the bodies or stored in a safe and organized manner if the bodies are to be buried immediately. Cold storage of the body immediately after it is discovered will slow the rate of decomposition, thereby preserving the body for future identification and handling by emergency professionals. Do not use dry ice or regular ice, because both are impractical for long-term storage.

"WITHIN A SHORT AMOUNT OF TIME, A BODY WILL BEGIN TO DECOMPOSE. AFTER TWO DAYS, FACIAL RECOGNITION BEGINS TO BE DIFFICULT."

DISPOSAL AND BURIAL

Within a short amount of time (12 hours to a day, depending on the climate), a body will begin to decompose. After two days, facial recognition begins to be difficult. The smell will be overpowering, and gasses might begin to build up inside the body, which might cause them to burst. If rescue or a remedy to your survival scenario isn't imminent, you'll have to dispose of the bodies soon.

Keeping a body cold in normal situations is nearly impossible, especially in an emergency in which electricity is nonexistent, so the next best thing is to dig temporary burial sites. The temperature underground is considerably cooler than at the surface, so the bodies will be better preserved there (and out of sight from other survivors) for future examination or investigation.

In selecting a burial site, it should be close to the incident but at least 600 feet from any source of drinking water. Take into consideration the local water table level, the type of soil you'll have to dig in, and the number of graves you will be digging. For fewer than five or six bodies, dig separate graves, but for more than six, it is easier to dig a trench grave. Regardless of



PHOTO BY JEAN-PIERRE CLATOT / GETTY IMAGES

which, the grave should be at least five feet deep, and there should be 1.5 feet between the bodies. Lay them in one layer only (don't stack), and clearly mark not only each body, but also the entire gravesite at ground level.

If in an area that is teaming with wildlife, it is a good idea to cover the disturbed ground with rocks to keep animals from digging up the bodies.

WHAT ABOUT CREMATION?

Avoid cremating a body, if possible. It takes a tremendous amount of heat to break down a human body to its core elements (much less multiple bodies), and you'll usually end up with a partially incinerated body that you'll eventually have to bury anyway. Plus, cremation will destroy evidence that might be needed for future identification.

THE FUTURE

When your tribulation has ended, and after the choppers lift you to safety, contact the person in charge and hand him the list of bodies you buried, the pictures you might have taken, and any/all information related to what you had done. You'll be weary, traumatized, and perhaps emotionally compromised, so the sooner you pass along this information, the sooner you can lament the lost, recount your ordeal, and get busy rebuilding your own life.

Infectious Disease Risk

From an uninformed person's point of view, death and disease go hand in hand: The moment the spirit leaves a body, the body itself somehow becomes infectious, and merely touching it will spread this disease. Perhaps that is a defense mechanism, but those who died as a result of natural disasters do not suddenly carry diseases. This is because victims of natural disasters die from trauma, such as drowning or fire. However, according to the United States Department of Health, "All dead bodies are potentially infectious" and should be treated accordingly.

For example, there is a small risk from tuberculosis, hepatitis B and C, HIV and diarrheal diseases. However, the infectious agents responsible for these diseases do not last more than two days in a dead body (except for HIV, which may survive up to six). The Department of Health continues, "Most organisms in the dead body are unlikely to infect healthy persons; some infectious agents may be transmitted when persons are in contact with blood, body fluids or tissues of a dead body of a person with infectious diseases."

The Department of Health classifies dead bodies into three categories. Category 1 is for those who have died of trauma and accidents/emergencies and who lack any known disease. Category 2 is for those with moderate diseases, such as HIV, hepatitis C, SARS, avian flu, MERS, and Creutzfeldt-Jakob disease. Category 3 is reserved for bodies with highly infectious diseases, such as anthrax, rabies, viral hemorrhagic fevers, and the plague. Equipment needed for each category will vary and builds on the previous one. Category 1: gloves, eye protection, face shield; Category 2: Add a water-resistant gown/plastic apron and a surgical mask; Category 3: double gloves and shoe covers.

When dealing with dead bodies, it is always smart not to eat or drink in their presence; do not touch your eyes or mouth, and keep any and all wounds covered with waterproof bandages. Wash exposed skin frequently and thoroughly after handling a dead body.

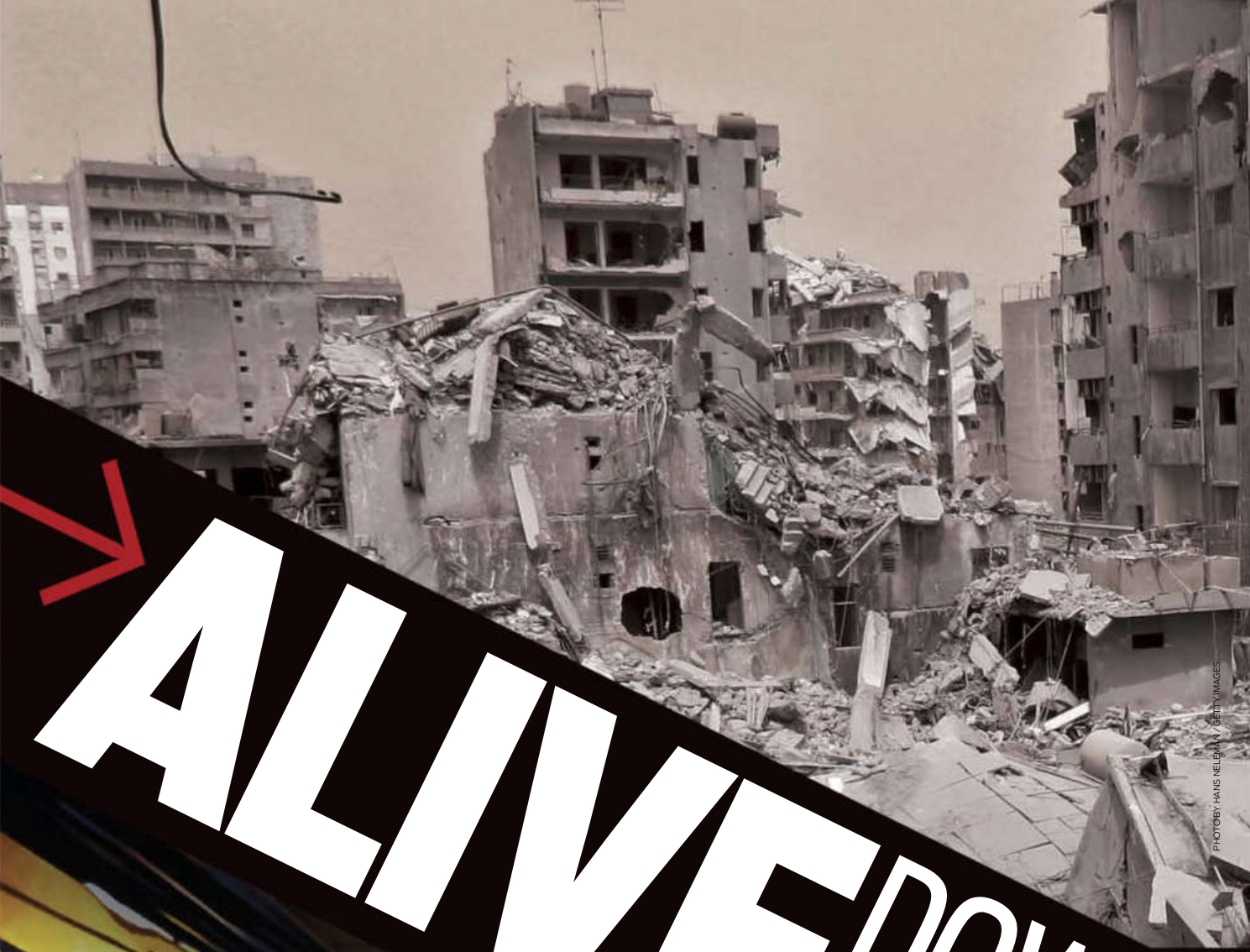


PHOTO BY HANS NELEMAN / GETTY IMAGES

ALIVE DOWN UNDER



With your home destroyed or unlivable, you will need to relocate. What better place to move to than your safe and secure underground emergency bunker?

THE INS AND OUTS OF BUILDING AND EQUIPPING YOUR EMERGENCY BUNKER

Story by **Larry Schwartz**

Just as many people dream about a second home somewhere nice that they like to go to for vacations or just to get away to, those in the preparedness and survival communities also have plans to "someday" have a second home. However, they are not looking for a vacation home. Rather, they are looking to build or buy a protected structure—a bug-out bunker, if you will—where, firstly, they can be safe from want because they have the resources they need, and secondly, safe from harm brought on by storms and floods, nuclear or chemical attacks, or attacks by people who didn't have the same foresight they did and now want to take what they have.

If you are one of those with preparedness foresight and have a bug-out bunker somewhere on your to-do list, following are the things you need to consider.



DIFFERENT BUNKERS FOR DIFFERENT NEEDS

Bunkers come in all sizes, shapes and capabilities. The one you pick should be based on what you are worried about. For most people, that will be one of three scenarios:

> **Shelter from natural disasters:** Storms, floods, fires, solar flares or something else that Mother Nature has up her sleeve has disrupted life as you know it by knocking out utilities or affecting deliveries of essentials such as food and fuel.

> **Civil unrest:** As with recent events in Baltimore and other cities around the country, the rule of law is being ignored, and people are rioting, looting or attacking each other.

> **Nuclear, chemical or biological hazards:** Because of a nuclear reactor failure (such as Fukushima) or a toxic fuel spill or gas leak, your normal living accommodations and/or place of work are no longer safe to inhabit due to the toxic environment everyone is facing.

LOCATION

Your bunker does not necessarily have to be far away from where you live and work. Depending on the scenario you are trying to prepare for, you could construct your bunker in the same place. With the addition of the proper shielding, entry door and air filtration systems, a basement family room or an underground storage room in an office complex can be turned into a viable bunker for any of the scenarios mentioned above. It just depends on how discrete you can be in your construction methods.

WHAT TO LOOK FOR IN A BUNKER

A well thought-out design is key to ensuring you have addressed all the issues related to the scenario you are concerned about. For example, sturdy doors are an absolute necessity, regardless of what threat scenario you are preparing for, but blast doors that are absolutely necessary for nuclear hazards are overkill if you are concerned about civil unrest. At the same time, the kind of air filtration system you put in place for a nuclear scenario will be very different from that for less-critical applications.

At a minimum, your bunker should have the following areas:

> secure, unobtrusive and defensible entrance;

> sleeping quarters that provide separation for adults and children, and privacy, as much as possible;

> "great room" area where people can gather during the day for meetings, relax or do their chores;

Shielding Required for Radiation Protection

To have adequate protection from initial and fallout radiation, you should have, at minimum, the level of shielding shown here:

Material	Thickness (inches)
lead	4
steel	10
concrete	24
packed dirt	36
water	72
wood	110



Floor plans for your bunker can be as simple or sophisticated as you want, as can be seen in this example from Rising S Bunkers.

IMAGE BY RISING S BUNKERS



IMAGE BY RISING S BUNKERS



IMAGE BY RISING S BUNKERS



IMAGE BY UTAH SHELTER SYSTEMS

(clockwise from top left) **Matching your design to the scenario you are facing is critical. A blast door like this one is required for a nuclear scenario but would be overkill for a natural disaster scenario. ● Keep working areas simple and functional. You don't want to fill your limited space with unnecessary items and large appliances that require lots of energy to do their jobs. ● Your finished bunker doesn't have to look spartan and sterile. You can add touches of home, as seen here, or, if your budget permits, you can finish it just like a regular home.**

> exercise area—it is important for people to stay fit, both for physical well-being and for mental health and morale;
> kitchen with ventilation and spaces for food preparation and cooking;
> eating area (separate from the kitchen, if possible) that will accommodate the number of people you will have in your bunker;
> utility room with controls for air conditioning and filtration, heating, and water purification and distribution;
> communications systems for monitoring what is going on in the outside world (such as an AM/FM receiver and a shortwave radio) and Family Radio Service (FRS) handheld radios for communicating inside the bunker or with members who are outside of the bunker for perimeter patrols or doing repairs;
> waste material management system;
> multiple sources of power, air intake and waste removal;
> shielding against radiation;
> sanitation area for cleaning dishes and clothing. This area can, and should be, within the bunker so you don't need to go outside (depending on the threat you are concerned with);
> If you are worried about the need to decontaminate people, equipment or clothing because of an NBC threat, that area should be outside of your living area—preferably before or beside your entrance to avoid cont-

Bunker Buyers and Builders Resources

The following documents and website provide useful guidance for anyone looking to buy or build a bunker of some kind. They can be found on the Internet.

FEMA P-320: *Taking Shelter from the Storm: Building a Safe Room for your Home or Small Business*

FEMA P-361: *Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms*

ICC-500: *ICC/NSSA Standard for the Design and Construction of Storm Shelters*

FEMA: www.ready.gov



IMAGE BY UTAH SHELTER SYSTEMS



IMAGE BY RISING S BUNKERS



IMAGE BY RISING S BUNKERS

(clockwise from top left) **Keeping fuel and generators separate from living and working spaces helps minimize danger of fire and smoke.**
Toilets and other sanitation features should be selected based on how they will be used. Options include chemical toilets, composting toilets and variants of regular toilets that recycle the water used to flush.
Reinforced steel cubes like those shown here provide more flexibility in floor plan design but do require more reinforcing than circular pipes.

aminating the area where everyone will be living for the next several days or weeks; and
> secure, unobtrusive and defensible emergency exit.

DON'T WANT TO DIY? FIND A BUILDER

Regardless of what kind of threat scenario you are preparing for, you should make sure that your builder has the experience and background to both understand and provide what is needed to fully address that scenario. Their skills, knowledge and designs may be up to handling a chemical spill situation but may not be up to the additional challenges that come with a nuclear scenario. Paul Seyfried of Utah Shelter Systems cautioned about not taking things at face value. Door seals or load-bearing structures may look impressive and adequate, but they might not have been tested to the stresses your scenario would subject them to. Having generators in the same space you are living and working in may seem like a good idea for convenience, but a fire or problem with them can contaminate the air you are breathing before you can do anything about it. Therefore, having them in a separate, sealed environment should be a design requirement.

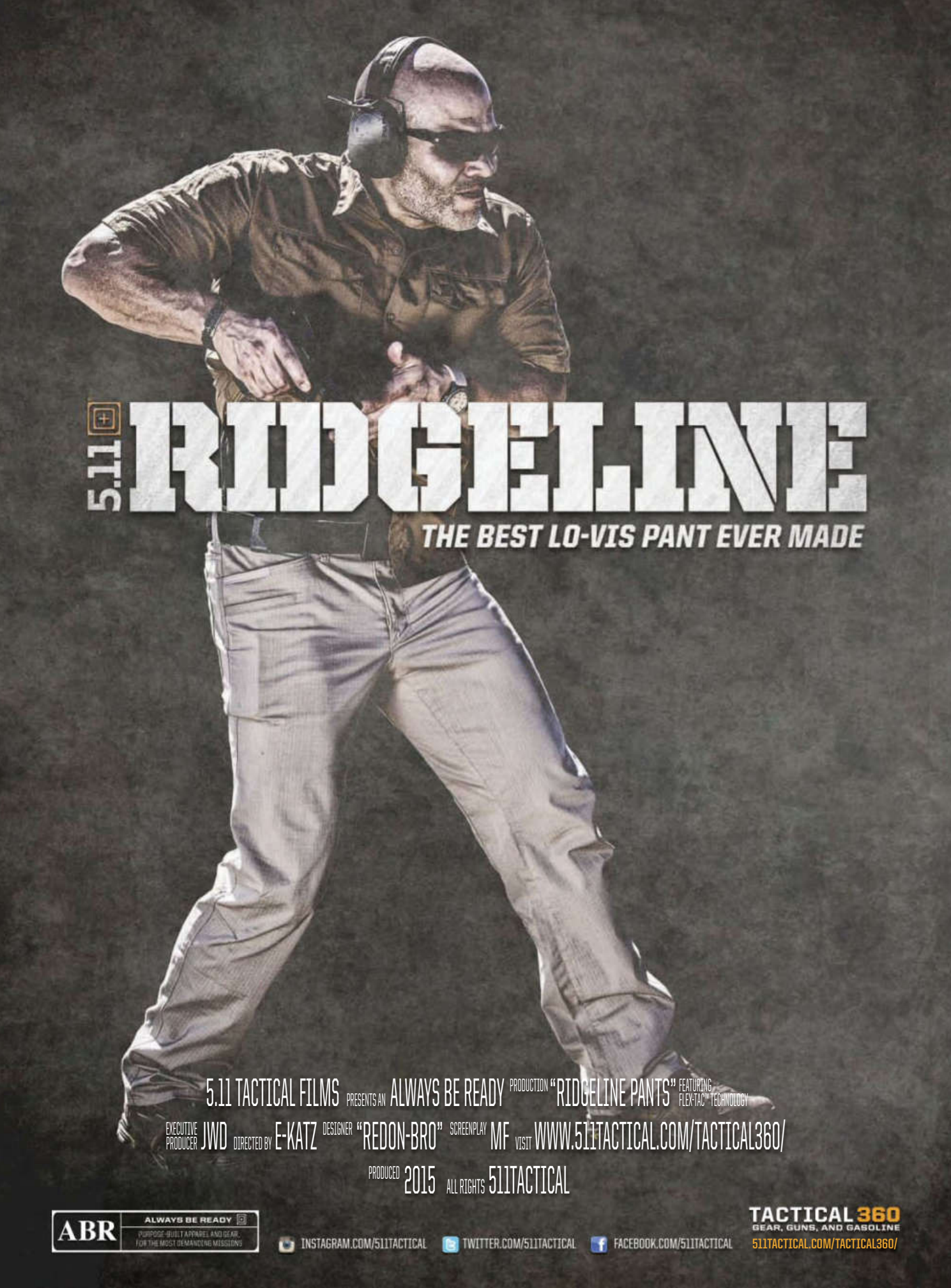
Do your research and ask for references from customers and from the industry.

BIG STEP

Buying or constructing a bunker or bug-out retreat is a big step for any prepper. You now have the basics to understand how to decide why you need it, how to find a builder and materials, and what you need to have in your bunker. Do your planning up front before diving into construction; think through every aspect of the design and construction so you don't make mistakes halfway into the project; and then build the bunker you want and need.

Major Bunker Builders

Atlas Survival Shelters: atlassurvivalshelters.com
Northwest Shelter Systems: northwestsheltersystems.com
Rising S Bunkers: risingsbunkers.com
Spartan Survival Systems: spartansurvivalsystems.com
Ultimate Bunker: ultimatebunker.com
Utah Shelters USA: utahsheltersystems.com
Vivos: sterravivos.com


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ATLAS SURVIVAL SHELTERS





Based in Los Angeles, Atlas Survival Shelters offers a variety of styles. Its most popular is the Backyard Bunker, a three-to four-man bomb shelter that includes an NBC air filtration system, blast door, and underfloor storage.

SPARTAN SURVIVAL SYSTEMS



Spartan Survival Systems' Series-1 shelter is 10 feet in diameter with lengths ranging from 20 to 35 feet. It includes a blast hatch, a ladder shaft, and a decontamination room. Spartan offers many upgrades.

ULTIMATE BUNKERS





Ultimate Bunkers are designed to have at least five feet of dirt on top of them. They come in a variety of sizes—from 10x20 feet to 40x50 feet. Additionally, custom designs can be built to fit any need.





VIVOS







The Vivos Group offers a series of pre-built shelters around the world, as well as a line of custom-built shelters for personal use. The Quantum shelter package comes completely furnished, includes a primary and emergency exit, water and septic tanks, as well as backup systems.

Setting up House

OUTFITTING YOUR BUG-OUT BUNKER THE RIGHT WAY

Story By Larry Schwartz

You have bought, built or cobbled together the building you will live in if you are forced to bug out due to economic problems, natural disaster or civil unrest. Now, you are faced with the challenge of how to stock it with what you and your family will need to keep body and soul together for at least a month. What do you need to stockpile there ahead of time, what should you bring with you, and how much of each thing do you need?



A well-stocked pantry will serve you and your family well. Design your storage units to maximize the use of available space—like this hidden pantry that includes storage on the doors.

PHOTO COURTESY OF WIKIMEDIA

CONSUMABLES

Food: Probably the most important decision you will make, in terms of what to stock in your bunker, will be the food you will keep there. Changing dietary habits, such as going from eating fresh and canned foods to a diet of freeze-dried or dehydrated foods, can cause digestive problems in both young and old. Variety is also important to keep in mind, so don't plan on eating the same menu every day or every week. Without food that people will enjoy eating, and without the energy and sense of well-being that come with being well fed, the morale of even the most hard-core survivalist can take a nose-dive. You can keep your food familiar and palatable and still count on a long shelf life by focusing on canned foods and staying away from things that need to be frozen or reconstituted (you won't want to pay an electric bill to keep a refrigerator running).

Water: Stock enough drinkable water in individual bottles or gallon or larger containers to have one gallon of water per person per day for drinking and cooking. Liter or quart containers are useful with drinking water, because it is easy to keep track of whether you have had your three bottles per day. Another half-gallon per person per day for personal washing or laundry should also be stored.

Energy/fuel: A look at what you use for heating, cooking, communications and lighting will tell you what kind of energy source you will need. Stockpile batteries for every device that needs them in the size they use. A trick that backpackers use to simplify their lives is to try and pick devices that use the same kind of battery; this way, you only need to stockpile one or two sizes of battery



PHOTO COURTESY OF FLICKR

Canned goods are a better option than dehydrated or freeze-dried foods for a stationary location such as a bunker. They are what your family is used to eating, and they do not use up your stocks of drinking water. In fact, they provide additional water for your family.

instead of six or more. Having a number of automotive or marine batteries on hand, along with a power inverter, will provide you with a useful backup power supply should your primary go down. The prudent person will have a mixture of energy sources, especially if you don't want someone to know where you are. So, augment your battery or gas energy sources with solar, wind and waterpower systems, as well.

Sanitation: To keep things clean, keep on hand laundry and dishwashing detergent, paper towels, toilet paper, hand soap, hand sanitizer and cleaning tools such as plastic scrubbing pads. Keep the same amounts that you normally use at home for the month. To take care of human waste, you will need to purchase a chemical and composting toilet, because you may not be able to (or want to) go outside of the bunker. Make sure you have room to store whatever containers your toilet uses once they are filled.



PHOTOS COURTESY OF WIKIMEDIA

NON-CONSUMABLES

Kitchen gear: A full set of pots and pans is the first thing you will need in your bunker kitchen. Don't think you can get away with just one of each. If you have a multi-burner stove and maybe an oven—which you should—you will be using more than one pot and pan to make meals for your family and yourself. Follow that with at least one of each utensil you use at home: ladles, spatulas, knives, spoons for stirring and serving, and a cutting board. And, of course, a manual can opener so you can get to the food you are going to prepare. A colander is also a useful item to include in your kitchen, as well as plastic containers for leftovers and other food you will want to store in your refrigerator once you get to your bunker.

Tools and maintenance gear: Because you are in your bunker for whatever reason, you can't depend on your local handyman to come and fix



(above) **Just having the right first aid gear on hand is not enough. You and everyone with you need to know how to use it and should practice with it on a regular basis.**

(left) **Handheld FRS-based radios will likely be used every day while at your bunker. They will provide communications and coordination on the drive there if you are using multiple vehicles, and they let you know what is going on between people inside the bunker and those doing a perimeter patrol.**



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PHOTO COURTESY OF WIKIMEDIA



PHOTO BY THINKSTOCK

(above) **Don't fall into the trap of getting large amounts of the same foodstuffs. Your grocery store will have a wide variety of canned meats, rice or pasta dishes, and canned vegetables, so take advantage of them.**

(left) **Propane comes in a wide range of sizes—from these large tanks to medium-sized canisters used with backyard gas grills to the small, green canisters used with smaller camping stoves. When picking your heating and cooking appliances, make sure you have the hoses and connectors so you can use any of the different sizes.**

anything that breaks. You must have both the skills and the tools to address any problems that arise from a clogged drain, a short in the wiring, replacing stairs or cabinets or metal-working. The sidebars provided here give a list of basic tools you should consider, along with combination power tool packages you might want to pick up at your local home-improvement store. All of this should be kept at your bunker, because you might not have time to pick it up from home; nor will you want to waste space in your vehicles to carry it there.

Home and self-defense: If defending your bug-out location is part of your plan, you will want to have on hand some combination of long guns (rifles and shotguns), handguns and non-lethal weapons. In addition, you will also want the equipment needed to maintain them and, of course, plenty of ammunition for each one.

First aid: When planning for your first aid supplies, you need to think about three general categories: basic first aid needs, medicines and drugs, and trauma needs. Basic first aid needs will include things to handle cuts and abrasions, heat- and cold-related injuries and some first aid scissors. Medicines and drugs will include stockpiles of prescription drugs you and your family need, as well as over-the-counter medications for allergy, pain, and bowel and stomach distress. Make sure to rotate these out on a regular basis so your stocks have not gone past their use-by dates. Trauma-related supplies—the part of your planning most people forget—include materials to handle broken bones, arterial bleeding, chest wounds and other breathing problems, as well as poisoning. Trauma kits with the right mix of materials are available from a number of vendors on the Internet.

Communications: Although it isn't something you will need to operate your bunker, you will need some kind of communication capability. Handheld Family Radio Service (FRS) radios will provide short-range communications with the people in your group if they are outside of the bunker. These typically have a range of 20 to 30 miles, but they are FM, or line-of-sight, devices. As a result, they can be blocked or limited by buildings, land masses or even forests. They have multiple channels that you can use but no encryption. You will also want to be able to hear what it going on with the outside world, and, if you choose, to communicate with them. For that, you will want to have either a shortwave radio or the handheld VHF radios that are used on boats and other pleasure craft. With these, you will be able to monitor news and weather reports.

HOW MUCH IS ENOUGH?

Determining how much you need to stockpile for each category will depend on you, your family and what you are used to. Having the right frame of mind and good morale

BASIC TOOLKIT FOR YOUR BUNKER

A basic toolkit for your home away from home should include a mix of hand tools and power tools that cross the spectrum of carpentry, plumbing and electrical.

- > multi-tool
- > claw hammer
- > screwdriver set
- > torx and hex wrench sets
- > power screwdriver
- > power drill
- > power saw
- > battery charger for power tools
- > saw for cutting wood and lumber
- > saw for cutting pipes (metal and PVC)
- > socket wrench set in metric and nonmetric sizes
- > level—torpedo and 3-foot-long
- > T-square
- > measuring tape
- > carpenter's pencils
- > pliers—needle-nosed and flat nosed
- > pipe wrench
- > combination wrench set
- > adjustable wrenches
- > a variety of wood and metal files
- > flashlight, headlamp and handheld
- > plumber's snake
- > toilet plunger

are often overlooked aspects of bug-out living, so plan to make things as much like they are at home as possible.

Some general guidelines for food:

- 1 to 2 gallons of water per person per day for drinking, cooking and sanitation. Include extra water in the event of emergencies or if you have to stay longer.
- Follow the serving sizes on cans of vegetables and grains; one can of vegetables has two servings in it, so plan on two cans per lunch and dinner for a family of four.
- A spreadsheet showing what you plan to store will help you calculate how much of each one you need for different numbers of people and different numbers of days.

Some general guidelines for fuel:

- Test your equipment at home to see how much fuel you use for the average breakfast, lunch and dinner. Then, calculate how many fuel canisters you will need for your expected stay.
- Use clothing to adapt to the temperature in your bunker rather than constantly running heating or air conditioning.
- Keep a 25 to 50 percent overage of fuel so you will have enough in the event of a problem, leakage or if you have to stay longer than expected.

DOUBLE UP

The key thing to remember is that you should have everything you need in your regular home *plus* what emergency services would provide for you already in place in your bunker. You can't depend on bringing anything with you, because you might not be able to get to your home before you have to head for your bunker. Make sure everything will be able to stand on its own without access to public utilities. Similarly, make sure that anything you were used to at home, such as your normal laundry detergent or brand of toilet paper, is also at the bunker in order to provide a seamless transition.



PHOTO COURTESY OF WIKIMEDIA

How you handle waste, as well as the supplies you need to do so, will be one of your biggest challenges. This composting toilet solves a big problem while minimizing the amount of water used.





A Multi-Caliber POWER

RUGER'S NEW REDHAWK COULD BE



The new .45 Auto/.45 LC Redhawk sports a new rounded grip frame instead of the regular square butt for improved concealability and handling.

THE VERY ESSENCE OF BEING A SURVIVALIST, OR "PREPPER," FOR THOSE BORN AFTER THE 1980S, IS THE ABILITY TO ADAPT TO A SITUATION, HANDLE ONE EXTREME TO ANOTHER AND ALSO BE FLEXIBLE WITH EACH NEW SCENARIO.

While being a survivalist does entail storing almost everything to be prepared for situations such as food shortages, power outages, droughts, viral outbreaks and economic calamities, it goes beyond that. It's also about the capacity to make the most of what you have and to make use of what you find.

Just this past month or so, Ruger announced a new Redhawk with a 4.2-inch barrel and a round butt frame, rather than the typical square butt of its other Redhawk models. The rounded butt was to make the gun more concealable and improve the handling characteristics a bit.

And it only got better from there.

Not only was the new Redhawk chambered for .45 Long Colt; it was also set up to fire .45 Auto rounds, with full-moon clips, three of which are provided with the Redhawk. That one little extra really added a whole new dimension to the introduction of the new Redhawk, and, in my mind, elevated its importance as a key firearm to have in a prepper's collection.

Story and Photography by **Garrett Lucas**

HOUSE

THE PREPPER'S ONE-GUN SOLUTION



One of the nicest and most versatile holster offerings on the market for the 4.2-inch Redhawk is Galco Gunleather's Great Alaskan Shoulder System.

VIRTUE OF VERSATILITY

The .45 Long Colt round, itself, is one of the most versatile handgun cartridges on the market. There are loads in the 160 to 200 grain range that can be used for small game or target practice; 200 to 225 grains for self-defense; 250 to 260 grains for hunting game such as deer; and you can even choose bear-stoppers in the 300- to 325-grain spectrum.

Now, couple the versatility of the .45 LC round with the new Redhawk's ability to also fire .45 ACP and .45 Super. That's a tremendous range of power, but it's also a broad gamut of opportunity: In a real-world survival situation, ammunition may be in short supply, and it would certainly be useful to have a gun on hand that fires multiple calibers.

While the .45 LC used to be a very popular round in its day, it's nowhere near as common as it used to be. The .45 ACP round, however, is one of the most common handgun rounds you'll come across in this country. With three available caliber options, whether you're bartering or scavenging, you've got a good chance of finding rounds meant for serious work that will fire in the Redhawk.

"WITH THREE AVAILABLE CALIBER OPTIONS ... YOU'VE GOT A GOOD CHANCE OF FINDING ROUNDS MEANT FOR SERIOUS WORK THAT WILL FIRE IN THE REDHAWK."

TO THE FIRING LINE

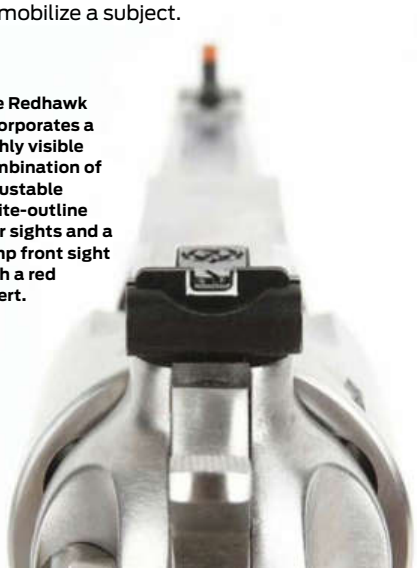
I took two days trying out different loads in the Redhawk. The amount of testing involved took longer, simply because of the number of different calibers and loads I fired and because I was very deliberate in testing the premium ammunition that was available. Buffalo Bore was kind enough to provide several types of ammunition to use for the Redhawk review. In fact, this company was too kind: It provided me with different loads for .45 ACP, .45 Super and .45 Long Colt, as well. I figured out early on that this was going to take some time.

Anyone who has used Buffalo bullets before knows that these are premium cartridges and not cheap by any means. The average cost per round with the variety I had on hand was around $2.00—but it was so very worth it, when you consider the accuracy and performance.

With that in mind, and because I wasn't using a Ransom Rest, I took my time testing the accuracy of the loads from a bench rest at 25 yards. I'm not getting any younger, and my eyes aren't what they used to be, but the Ruger Redhawk still shined with several of the Buffalo Bore loads.

The first box I tried out was the lead-free, .45 Colt +P 225-grain Barnes XPB load. Billed by Buffalo Bore as suitable for big game from deer to elk, this load packed a little recoil but was quite consistent and accurate, with no fliers to speak of. This allowed me to easily sight in the +P .225-grain Barnes XPB load by walking the rounds up until I was dead-on at 25 yards. I had it sighted in within six rounds, with the only real variance affecting POI being my eyesight.

What really helped with easily sighting-in the Redhawk was the high-contrast, "Immobilize" zones on Thompson Target's Full Torso B27STOP target. It has a skeletal silhouette with high-contrast areas done in bright red with inner white circles to indicate key areas to immobilize a subject.



The Redhawk incorporates a highly visible combination of adjustable white-outline rear sights and a ramp front sight with a red insert.

After trying seven different loads of a couple of rounds each, the winner for the best group at 25 yards was the Buffalo Bore 225-grain Low-Flash, Anti-Personnel wadcutters at standard pressure. This group came in at just a hair over one inch from center to center, which proves that once you find the right load, the Redhawk is capable of incredible accuracy. Some of the other loads weren't anything to sneeze at either.

THE BEAST

Another accurate offering for the Redhawk was the hard-hitting Buffalo Bore 325-grain L.B.T.-L.F.N. round. This is the .45 LC round you take into grizzly country for protection. Because of the lack of cushioning with the thin wood grips, the shooter feels the recoil of all the various loads a bit more than with Ruger's .45 LC Redhawk with Hogue grips; but the 325-grain load was something extra special, to put it mildly. Even so, it was still manageable and bearable for at least a few shots.

Admittedly, you certainly feel the jarring recoil of the 325-grain round, and, at about the fourth shot, your hands are stinging a bit. At round six, you're definitely done for a while (at least I was), unless you've got a quality shooting glove. However, this round isn't meant for plinking; it's for a worst-case scenario in the wilderness to defend your life. With immediate danger facing you, and with the adrenalin pumping through your body, you're not going to be worrying about the recoil.

POST-RANGE IMPRESSIONS

Though I focused a lot on the .45 LC rounds, I shot plenty of the .45 Auto rounds, as well, including the 230-grain JHP .45 Super rounds, which turned in impressive results in the accuracy department, as well. The standard pressure, and even the +P variety of .45 ACP rounds, was downright pleasant to shoot within the massive platform of the Redhawk.

Everyone is already aware of the .45 ACP's potency for self-defense. There's no denying its stopping performance during the past century, and loading a full-moon clip of .45 ACPs can be nearly as quick as replacing a magazine. (Just ask Jerry Miculek—a.k.a. "The Greatest Shooter of All Time.")

I've seen a bit of variance between reported trigger pulls for the new Redhawk, but I was perfectly satisfied with the sample I received. My trigger scale read 12.5 pounds for the double-action pull and 6.25 pounds for single

The Great Alaskan Shoulder System

»Because the 4.2-inch Redhawks are still fairly new to the market, there are not a lot of offerings to be had when it comes to holsters. However, I came across a beautiful specimen that meets my needs perfectly, especially when you consider the context of versatility. It's Galco Gunleather's Great Alaskan Shoulder System (GASS).

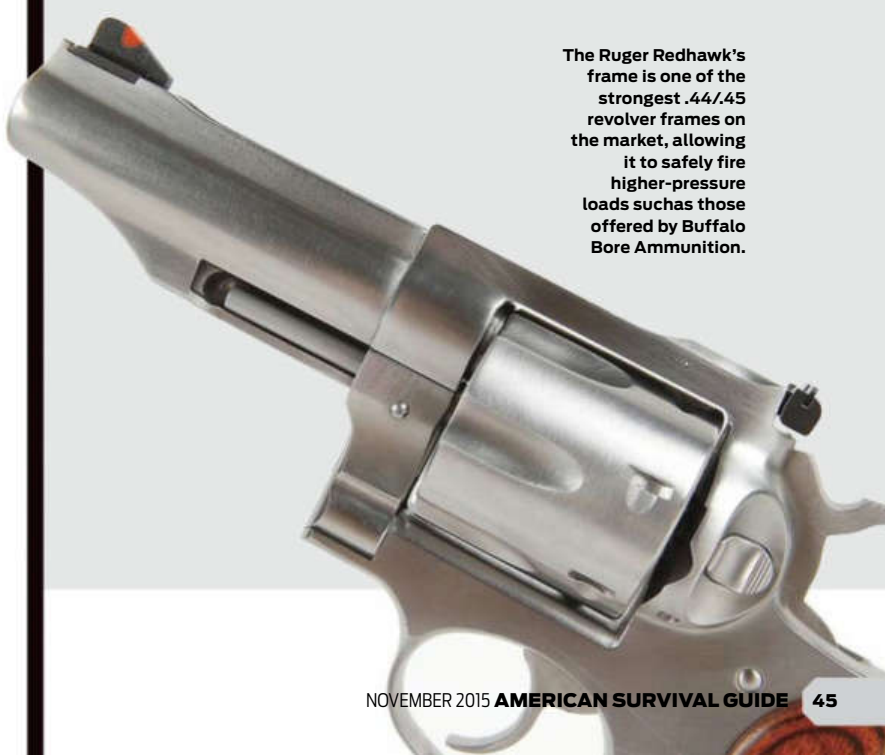
This holster is designed to bear the weight on one shoulder and has a cross-strap that runs behind the back and around to where it clips to the holster in front of the wearer's body. This places the Redhawk in a cross-draw position about halfway up the torso. This is a perfect solution for carrying this type of handgun.

The wide shoulder strap is very comfortable and doesn't place the same kind of strain on the shoulders or neck area as other shoulder systems sometimes do. It can be worn on the same shoulder where the gun is positioned, or you can wear the strap across the chest and over the opposite shoulder.

There are multiple adjustment points on the shoulder strap, leather back strap and the nylon strap that comes around to the front of the body, all of which allow the user to tailor a perfect fit with this holster.

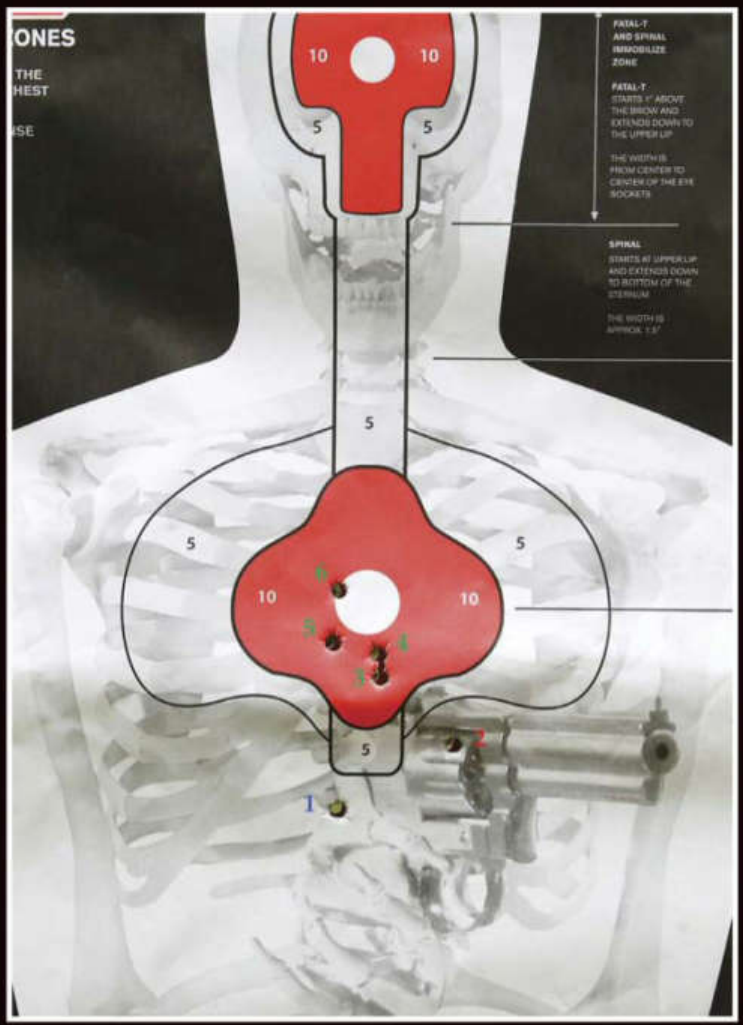
Though I mentioned the context of versatility in regard to this holster, that comment was meant for what this holster allows the user to do, rather than necessarily the holster, itself. For instance, during the summer time, the holster can be worn with lighter clothing without the need for a heavy belt and accompanying clothing. Throw on your shorts and T-shirt, and then slip on the GASS. You'll be adequately armed while you stay nice and cool throughout the day.

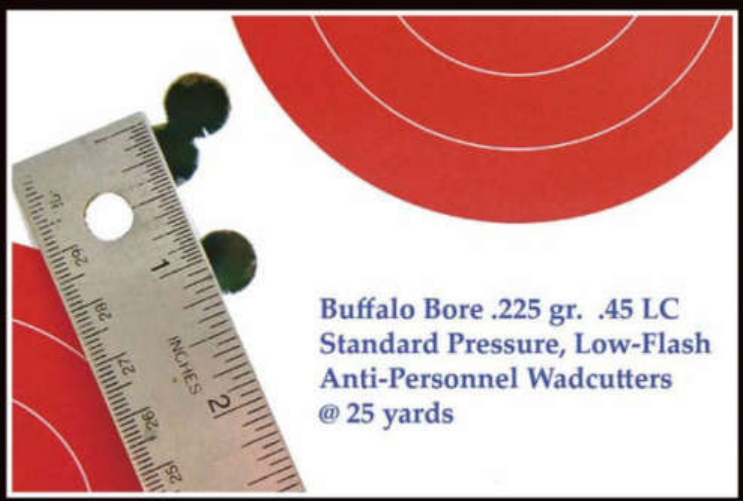
The holster can also be adjusted to wear over winter clothing while you're out hunting or foraging. And, for those who like to backpack or camp out, the G.A.S.S. places the Redhawk out of the way of hip straps or pads on packs and still allows for quick access to your firearm.



The Ruger Redhawk's frame is one of the strongest .44/.45 revolver frames on the market, allowing it to safely fire higher-pressure loads suchas those offered by Buffalo Bore Ammunition.

11.15





(top) **The 225-grain +P Lead Free load from Buffalo Bore was a very accurate and consistent load. The author got the Redhawk sighted in on the Thompson B27STOP Full Torso target at 25 yards from a bench rest with just six rounds ... and some aging eyes.** (above) **Three-shot groups were fired with the premium rounds, and the best of the day were the Buffalo Bore .225-grain .45 LC wadcutters, which came in just a hair over an inch at 25 yards using the "Bright Lightning" target from Thompson Target.**



Buffalo Bore offered a good sample of various rounds that can be shot in the Redhawk—everything from self-defense rounds to hunting rounds—in various calibers, including .45 ACP, .45 Super and .45 Long Colt.

SPECIFICATIONS

Material: Stainless steel
Finish: Satin stainless
Front sight: ramp, red insert
Rear sight: adjustable, white outline
Barrel length: 4.2 inches
Overall length: 9.5 inches
Weight: 44 ounces
Grips: lasered hardwood
Twist: 1:16
Capacity: 6

action. The DA trigger pull was smooth and allowed for quick follow-up shots—essential for self-defense—while the SA pull, though a bit heavy, broke crisply for steadier control of the gun while firing.

THE ULTIMATE SURVIVAL HANDGUN?

So, is this the perfect survival handgun? Nah; nothing's perfect. It would have to be all things to all people in order to be perfect, but it comes pretty close. In the context of being in a pre-paredness mindset, the new Ruger .45 Auto/.45 Long Colt has a lot to argue for it.

It utilizes one of the most versatile cartridges on the market, and it accepts two other types of rounds, including .45 ACP, one of the most popular rounds across the country. In a TEOTWAWKI scenario, this would be a highly desirable firearm to have on hand for both its power and its range of caliber options. When it comes time to barter at the market, you've got a decent shot at finding ammunition that will work for you.

The Great Alaskan Shoulder Holster and the Redhawk are perfect companions on the trail, keeping the gun within easy reach and accessible while wearing a pack or a winter coat.



(above) **All these rounds demonstrate the wide variety of calibers and loads that can be fired from the new .45 Auto/.45 LC Redhawk. This makes it an extremely versatile handgun in a survival situation—both for ease of acquiring usable rounds and for the range of its potential uses.**



Aside from shooting .45 Long Colts, the new Redhawk accepts full-moon clips for shooting .45 ACP and .45 Super rounds. In the picture are Buffalo Bore's .45 ACP 255-grain +P Hard Cast bullets.

However, that same versatility also makes the new Redhawk a practical gun choice right now. It can be loaded with lighter self-defense rounds for when you're inside your home, and, during the summer months, a couple of chambers can be loaded with .45 Colt snake shot, just in case.

Using cheaper, .45 ACP ball ammunition, the Redhawk would be a great tool for plinking and for practicing various drills without busting the bank. And, when the autumn months come, you can step out onto your porch and smile as you smell winter in the air and head off for the mountains to do a little hunting.

The .45 Auto/.45 LC Ruger Redhawk, along with the Great Alaskan Shoulder Holster and Buffalo Bore's top-tier ammunition, will be a powerful and versatile system at the tips of your fingers any time you choose to wear it. To realize its full potential, you don't need to wait for the end of the world; you can just go find it. ■■■

About the Author: *Garrett Lucas has been an outdoors and preparedness enthusiast for 25 years. His areas of interest and expertise include firearms, edged tools, and preparedness gear and practices. He has written articles on these topics for more than eight years.*

SOURCES

Ruger.com | GalcoGunLeather.com
BuffaloBore.com | ThompsonTarget.com



" ... 100 GRAMS OF ADULT RAT MEAT CONTAIN 638 CALORIES, 32 GRAMS OF FAT, 61 GRAMS OF PROTEIN, 303 PERCENT OF YOUR DAILY VITAMIN A INTAKE AND 262 PERCENT OF YOUR DAILY CALCIUM INTAKE ... "

DIY Small-Game TRAP

BUILD A BETTER MOUSETRAP AND STAVE OFF STARVATION

Story by **Jamie L Burleigh** | Photography by Herbert Warner Jr.

When you're hungry, it's difficult to focus on most every task. All you can think about is your empty stomach and where your next meal might come from. These feelings are compounded during an emergency situation. The blood begins to lack the nutrients necessary to feed your muscles and organs. You begin to fade, lack good judgment, and give up hope.

Survival is about returning your life to normal or maintaining a quality of life in an adverse situation. To do so, you need to eat. Although mice and small rats would be difficult to swallow if you were flush with many food choices, the fact is, if mice and small rats are your only food choice, it changes everything.

Learning how to forage for food in a dire situation is a very important skill. The grocery stores may be closed; the food might be gone from the camp larder—or even worse. The ability to keep yourself or others alive also means you need to sustain your own existence until you find rescue.

Prepping is a great addition to your survival strategy, and planning ahead for any circumstance is always the best option. However, all provisions will eventually be consumed. They will need to be replaced—or you're not going to make it.

PHOTO BY THINKSTOCK



Tips & Tricks

> Rodents are not finicky eaters. You can find local food sources to bait them: pine nuts, acorns, berries and any roadside trash. Even the dried-up sweet syrup from a soda bottle or can might entice a rodent to enter the trap.

> More traps equal more food. Trapping is a numbers game. Play it.

> Even if you do not choose to eat the rodent, you can use it to trap larger prey; alternatively, use its entrails and skin for bait for fish, birds of prey, and land predators.

> Small rodents are easily caught. Using what you have on hand could mean the difference between life and death.

WHY MICE AND RATS?

In West Africa, rats are a major diet item. The giant rat (*Cricetomys*), the cane rat (*Thryonomys*), the common house mouse, and other species of rats and mice are all eaten. According to a United Nations Food and Agricultural Organization report, they now comprise over 50 percent of the locally produced meat eaten in some parts of Ghana.

In the small-animal kingdom, mice and rats are plentiful and virtually everywhere man has ever gone, from the big cities and small countryside villages to seemingly deserted islands and remote outposts. They multiply quickly and in great numbers and, according to nutritiondata.com, 100 grams of adult rat meat contain 638 calories, 32 grams of fat, 61 grams of protein, 303 percent of your daily vitamin A intake and 262 percent of your daily calcium intake, not to mention ample quantities of iron, magnesium, and phosphorus.

Furthermore, mice and rats are easy to catch with minimum bait, simple to skin and prep for cooking, and don't require a lot of fuel to cook thoroughly. Not only can you eat mice and rats (and other small rodents such as dormice, marmots, voles, chipmunks, and small squirrels), you can use them for bait to capture larger animals.

BUILDING A TRAP

One of the down sides of the human race is that it leaves its trash everywhere. One of its up sides is that it has the ability to fashion useful tools out of most anything.

For this trap, all you will need are a discarded soda/water bottle with a decent-sized opening, a wire coat hanger (or sturdy twigs), twine and a multi-tool. If you are lacking these items, it is easy to improvise: Pieces of wire, wood nails, screws, shoelaces, different plastic containers, scissors—use whatever you can to make this simple trap, and you'll be picking rat gristle out of your teeth in no time.

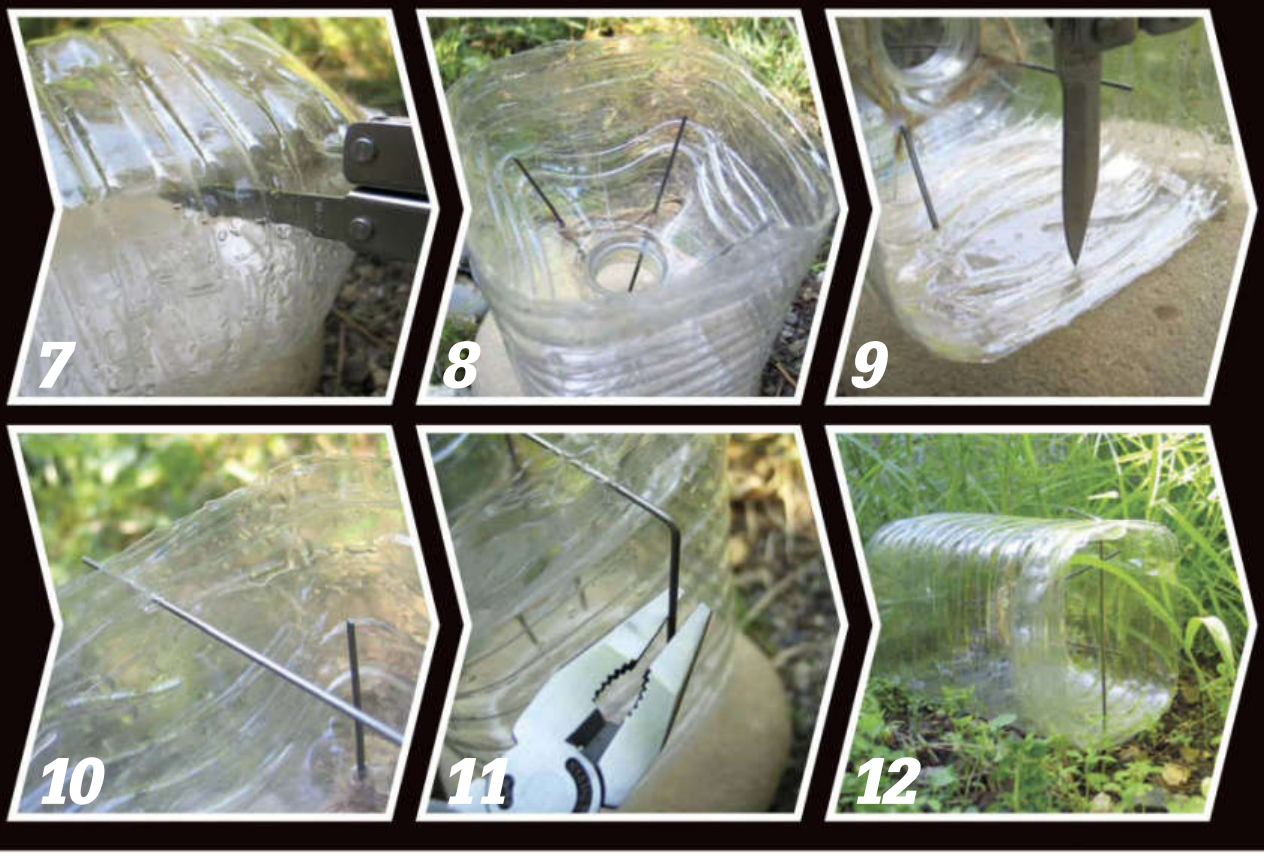
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WARNING!

Most states have laws that not only prohibit trapping animals but also trapping them with primitive traps. Please check your local trapping regulations, and make sure you use this trap only for preserving your life.

HOW IT WORKS

Placing the trap in an area where you suspect rodents travel (between a field and a source of water, for example) will



1. Discarded trash, especially plastic bottles, can be found everywhere. 2. The tools of the trade? A simple multi-tool. 3. Start by piercing the shoulder of the bottle with four equally spaced holes about an inch from the top. 4. Using the pliers of the multi-tool, snip from the coat hanger four equally sized pieces, each about 4 inches in length. Try to cut the wires at a sharp angle if you can. If you have a smaller bottle, you can use just three. 5. Place the wires inside of the pre-punched holes. 6. Using the cordage, tie and secure the wires in place. You may need to hold the wires in place while you tighten your wrapping. It is easiest to individually secure the wires one at a time to lock them in place. 7. Carefully cut off the top of the bottle. Try to be neat with your cut line, because this is important for the top to fit snugly. 8. Fit the top of the bottle inside the body of the container. If you've cut the top off correctly, it should fit snugly. Make sure there are no gaps around the cut edges. 9. On two sides opposite each other, punch two holes through both the main container and the inverted top. 10. Place the remainder of the coat hanger through the opposing holes. This will secure the lid to the container. 11. Bend the top of the wire over to keep the trap from pulling off the wire stake. 12. Place the trap on the ground in an area you feel will have some rodent traffic. You should also secure your trap by tying it off to a tree or rock. This might keep larger animals from stealing your trap and the delicious meal inside.

greatly increase your chance of catching something. Use any sort of bait, especially bait that is strong smelling, such as peanut butter or old, rotting food. The rodent will enter the trap through the bottle's opening to get at the food.

Once inside, the sharpened wires will prevent him from escaping. This is why it is important to secure the top inside the container so the rodent will not be able to squeeze or push his way out.

With one tool and only a couple of discarded items, this rodent trap is easy to make and will provide you with either the basis for obtaining larger food or, if you're hungry enough, a delectable meal all by itself.

See the photos at top for step-by-step instructions to make this trap. ASG

How to Cook a Rat

There are as many ways of cooking rat as there are for cooking "regular" meats such as pork, beef, and poultry. In a survival situation, the easiest way is roasting them over an open fire.

1. Start by skinning and gutting the rodent.
2. Leave the head on, but you can remove the tail (because it will just hang into the fire).
3. Skewer it through the anus and mouth with a stick.
4. Spice or marinade to your liking (if you have the means).
5. Place the skewered rodent over the hot coals of a small fire.
6. Turn frequently until it is browned/blacked to your liking. As with chicken, the juices should run clear when the meat is done.

If you have access to more cooking equipment and a few extra ingredients, consider whipping up a dish called *souris à la crème* ("mice in cream sauce"), created by Farley Mowat, a Canadian environmentalist made famous in the 1983 movie, *Never Cry Wolf*.



1. Skin, gut, and wash some fat mice without removing their heads.
2. Optional: Cover them in a pot with ethyl alcohol and marinate for two hours (Note: Mowat was in the Arctic when he developed this recipe and lacked proper marinades—and it has been proven that alcohol dehydrates meat).
3. Dice a piece of salt pork into small chunks and cook it slowly to extract the fat.
4. Drain the mice from the marinade and dredge them thoroughly in a mixture of flour, pepper, and salt.
5. Fry slowly in the rendered fat for about five minutes.
6. Add six to eight cloves, cover, and simmer for 15 minutes.
7. Prepare a cream sauce, transfer the sautéed mice to it, and stir them for about 10 minutes before serving.

PHOTO BY GETTY IMAGES

11.15

HIGH-RISE NIGHTMARE

EVERYDAY SURVIVAL HIGH ABOVE THE BIG CITY

Story by **Carolyn Koh**

THE VISIONS OF PEOPLE LEAPING FROM THE TWIN TOWERS ON 9/11 WILL FOREVER HAUNT US. ARE WE REALLY SAFE IN THESE MODERN STEEL-AND-CONCRETE CONSTRUCTIONS OR ARE WE MERELY LINGERING IN STEEL-AND-CONCRETE COFFINS?

Many of us work or live in high-rise buildings in the cities, and one of our worst nightmares revolves around the disasters that might impact us. The common thread in all survival success stories is preparedness—and, of course, a little bit of luck.

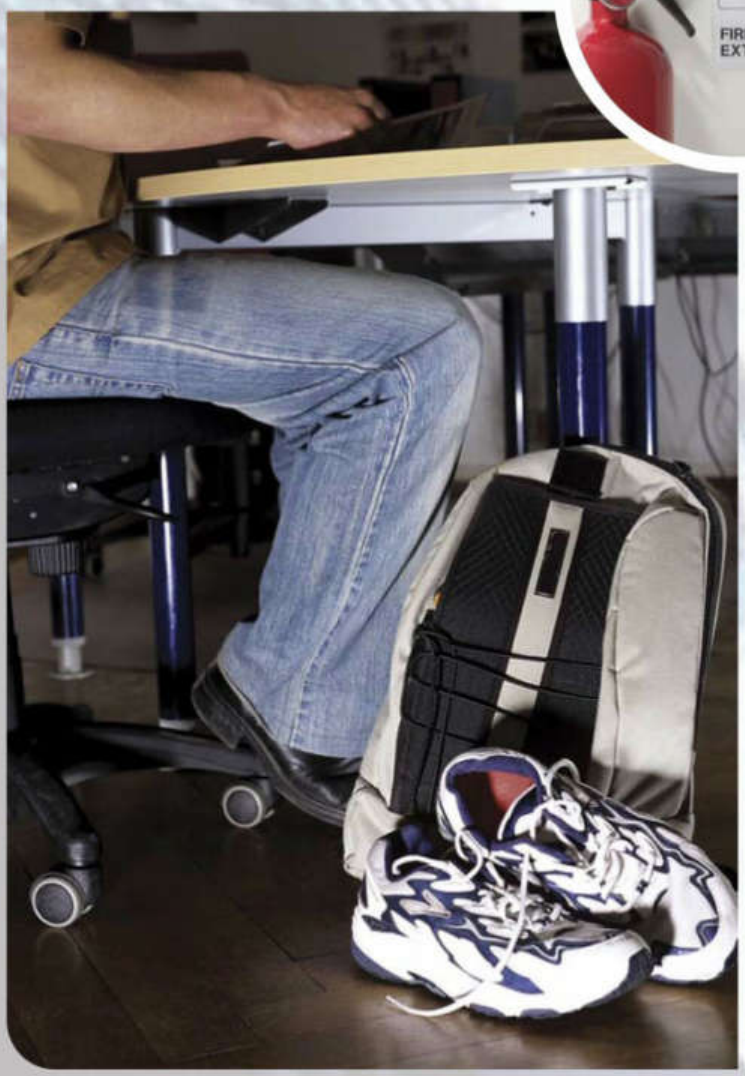
PHOTO BY GETTY IMAGES



"ARE WE REALLY SAFE IN THESE MODERN STEEL-AND-CONCRETE CONSTRUCTIONS OR ARE WE MERELY LINGERING IN STEEL-AND-CONCRETE COFFINS?"







PREPAREDNESS

Preparedness for a disaster is more mental and psychological than expensive gear. Situation awareness is key to survival. Surviving a life-threatening situation is 90 percent psychological; it is mental preparation and 10 percent equipment preparedness.

Apart from yearly fire drills—if they happen at all—you are unlikely to ever be able to practice for life-threatening scenarios in the building in which you work. Nevertheless, thinking and planning for them so they become familiar is the psychological preparedness we can mentally prepare for and is part of a survivalist's credo.

Emergency exits: The first thing everyone who works or lives in a high-rise building needs to know is where the emergency exits are and how to get to them. Every high-rise building has a floor map with emergency routes and exits marked clearly right next to the elevators. Every hotel has one behind the door of your room. Even if you are just visiting, glance at them and remember them, just as you would count the seats from the exit to your seat in an airplane.

Fire extinguishers: Do you know where the closest one is, and do you know how to use it? Although most fire extinguishers in buildings are the combination A-C type (ordinary combustibles plus electrical equipment), you might be in a situation in which there are other types of fire extinguishers. Only use a fire extinguisher when a fire is small and can be controlled.

We don't often get to practice using fire extinguishers, so remember "PASS":

P Pull the pin. There is a pin at the top of the extinguisher. This releases the lock.
A Aim the nozzle at the back of the fire.
S Squeeze the handle
S Sweep the nozzle from side to side.

DON'T OVERLOOK THE SIMPLE THINGS

First aid: Do you know where the office first aid kit is? Is it adequately stocked? Many are not. Make it your responsibility to see it always well stocked.

Office snacks: Go healthy, and go long-term. A jar of nuts and dried fruit will go further than a candy bar, should you need it. Make sure it will last awhile, too. An earthquake won't likely happen tomorrow, so make sure your emergency snacks can be stored for a while.

PHOTOS BY GETTY IMAGES AND THINKSTOCK



THINGS TO LOOK OUT FOR

Hazardous materials: Does your office store flammable or hazardous materials? Be aware of what and where they are.

Disabled colleagues: Depending on the situation and the disability, your only choice may be to place any disabled co-workers somewhere safe for rescuers who have specialized equipment. Many modern buildings have refuge areas that might be stand-alone, protected compartments or rooms on the floor or might consist of oversized landings in stairwells with fire doors on either side. Know those spots, and make sure they have something to catch someone's attention, such as a flashlight and/or a whistle.

Following, we cover several specific scenarios and provide survival tips and commonsense advice.

EARTHQUAKE

During an earthquake, a high-rise building sways side to side due to the lateral movement of the earth. Keep low. Most earthquake victims are injured when they fall as the ground shifts beneath their feet or are hurt when furniture and building fixtures fall on them. Get yourself into the interior of the building, and keep away from windows. The glass is likely to shatter as the window frames buckle. Get under a desk or a sturdy table, such as a conference room table.

"MOST EARTHQUAKE VICTIMS ARE INJURED WHEN THEY FALL AS THE GROUND SHIFTS BENEATH THEIR FEET OR ARE HURT WHEN FURNITURE AND BUILDING FIXTURES FALL ON THEM."

Historic brick-clad buildings can go up as high as 32 stories (one example is San Francisco's famed Russ Building). Many were built in the 1920s and have an added problem: The wall cladding is not anchored to the floors in such a way that they behave as one entity during the movements of an earthquake. Unless some retrofitting has taken place, the walls will buckle and separate from the floors, causing collapse. Still, your safest bet is to get to the middle of the



" ... MORE THAN 15,000 FIRES OCCUR IN HIGH-RISE BUILDINGS ANNUALLY IN THE UNITED STATES."

building and wait out the quake before attempting to leave the building.

When the building finally stops moving, assess the situation first before rushing out from under the table to get out of the building. Remember that there can be aftershocks. Find the closest exit, and leave quickly. Be aware of your surroundings when you exit the building, because there might be falling masonry or glass.

If the building is collapsing, your best bet might be to stay in place and find a sturdy piece of furniture, such as a heavy desk, and stay by it—*not underneath it*, because it could trap you. Position yourself by it with your head protected by your arms. The furniture will be able to support a piece of collapsing wall or ceiling and create a space adjacent to it. You might be hurt, but chances are that you will survive and rescuers might be able to extract you alive.

FIRE

According to theNational Fire Protection Association, more than 15,000 fires occur annually in high-rise buildings in the United States. Most of these fires start in the lower floors—the sixth floor or below. High-rise buildings are equipped with heavy fire doors in the stairwells and sprinkler systems to contain fires, and their fire alarm

TRAPPED IN A HOTEL FIRE

If the hotel hallway is filled with heavy smoke, or the fire is between you and the exits, stay in your room. The bathroom is a good place to wait for rescue personnel, because there is little combustible material in there. Fill the tub with water. In the event that your door/walls get hot, you can wet them down. You can also soak towels in water to seal off vents and the crack under the door.



systems are required to have emergency voice communication capability.

The survivalist assesses the situation: Is the fire above or below you? Are the hallways filled with smoke? Is the stairwell filled with smoke? Do you know the location of the other stairwell? Conventional wisdom tells you to get out of the building. The only question is, how? Situational awareness is key. Listen for instructions from emergency response personnel, who will instruct the floor that is on fire, the floors above and below to evacuate down to several floors below.

There are two appropriate reactions to a building fire: Go down the stairs to exit the building, or, if that is not possible, stay put. Rooftop rescues with helicopters are a dramatic Hollywood device. Roof rescues are not standard fire safety procedure. If the fire is severe, the heat will generate large thermal currents that will buffet a rescue chopper, making it hard to control. Also, downward thrust from the helicopter rotors can force smoke and superheated air onto rescue personnel below.

If you are trapped, evacuate yourself to several floors above the fire, and stay put. Call the fire department to let it know your location and, if possible, also signal your location by putting something light-colored on a window—a whiteboard or even your shirt, for example. Breaking a window is inadvisable, because it cannot be closed to prevent smoke from coming in; it could also create a chimney effect, drawing smoke and flames up the building.

If you are already on the move and smoke is thick, drop to your hands and knees and crawl. Hot air rises, and the air will be clearer nearer the ground. Test doors with the back of your hand (it is more sensitive to heat/cold) before attempting to open them. Additionally, and although it is not recommended, the survivalist might look to external devices such as a convenient window-cleaning rig or by keeping repelling devices in his office.



PHOTOS BY GETTY IMAGES

Note for Women

Women should always have one extra piece of survival gear that most men won't require: flat shoes. The last thing you want to have to do is walk down 20 stories in high heels. If your daily dress is a suit, hose and heels, keep a pair of walking shoes in a desk drawer.

SHOOTER/HOSTAGE

The advice from public safety officials in shooter situations is to get out of the building: Get out however you can, as fast as you can—if you can do it without attracting the attention of the shooter (i.e., if you think it is safe to do so). If you are unable to escape, hide or barricade yourself. Use heavy office furniture, such as desks. In addition, tables, chairs and trashcans are all usable debris to impede the advance of a gunman or gunmen.

The lunchroom or conference room might not be the best place of refuge, because the shooter might be seeking more victims. In a shooter situation, it is better to spread out than to remain huddled together in a bunch. Safety here is not in numbers, but it helps to have a buddy, so get your colleagues to pair up and find a safe spot to hide.

As a last resort, engage. Seek the best weapons you can—be it a chair or heavy flashlight—sneak up behind the shooter, if possible, and finally, don't stop once you've engaged. The moment you stop, you have made yourself



"THE SURVIVALIST IS OFTEN A LEADER, AND LEADERS WILL BE PREPARED."

BE A LEADER

The survivalist is often a leader, and leaders will be prepared. Leaders know where the roof access for the building is and if the building has exterior fire escapes. Leaders remember when, and on which side of the building, they last saw the window-cleaning rig. Leaders will also make the determination regarding whether to shelter in place or evacuate and then communicate it to others. You remember to keep to the right while heading down the stairs so rescue workers may head up unimpeded. You can't save everyone, but you can try.

a target, and basically, you are entering a gunfight with your bare hands.

Are you there with a trusted buddy? There's more power attacking as a pair than singly, and you can watch each other's back.

If you are behind a locked door when police arrive, ask for identification or call dispatch to verify the officer's identity before opening the door. Cooperate fully. If instructed, lie down on the floor with your hands behind your head. The



PHOTO BY GETTY IMAGES

police do not know if you are friend or foe until the situation is sorted out.

If taken hostage, your plan is to survive. Unless you are a trained hostage negotiator, don't try to talk to or argue with the gunman. Most are unbalanced. The most difficult part of being a hostage is being patient. Be vigilant and observant. You might be released or have a chance to escape. Then, the safety of others might depend upon your memory.

Emergency Equipment

A flashlight is one of the most important items you should have in an emergency. What to look for:

- **Rugged:** Will it break apart if you drop it?
- **Compact:** Is it small enough to fit into your purse/backpack?
- **Water-resistant:** Better safe than sorry—pipes break; rain happens.
- **LED:** Provides brighter light, uses less battery and has less chance of its bulbs breaking.
- **Focus:** This is a plus, not a must. Adjustable focus allows you to illuminate a larger area or to pierce through smoke/fog.

An external battery for your smart phone should also be on hand. What to look for:

- **Compact:** It's easier and more likely you would lug around a small battery than a large one.
- **Charge:** How much power can it store? Select one that is capable of recharging your phone fully two times or more.
- **Built-in LED flashlight:** This is not a must but a plus, because it provides an additional source of light in a lights-out situation.

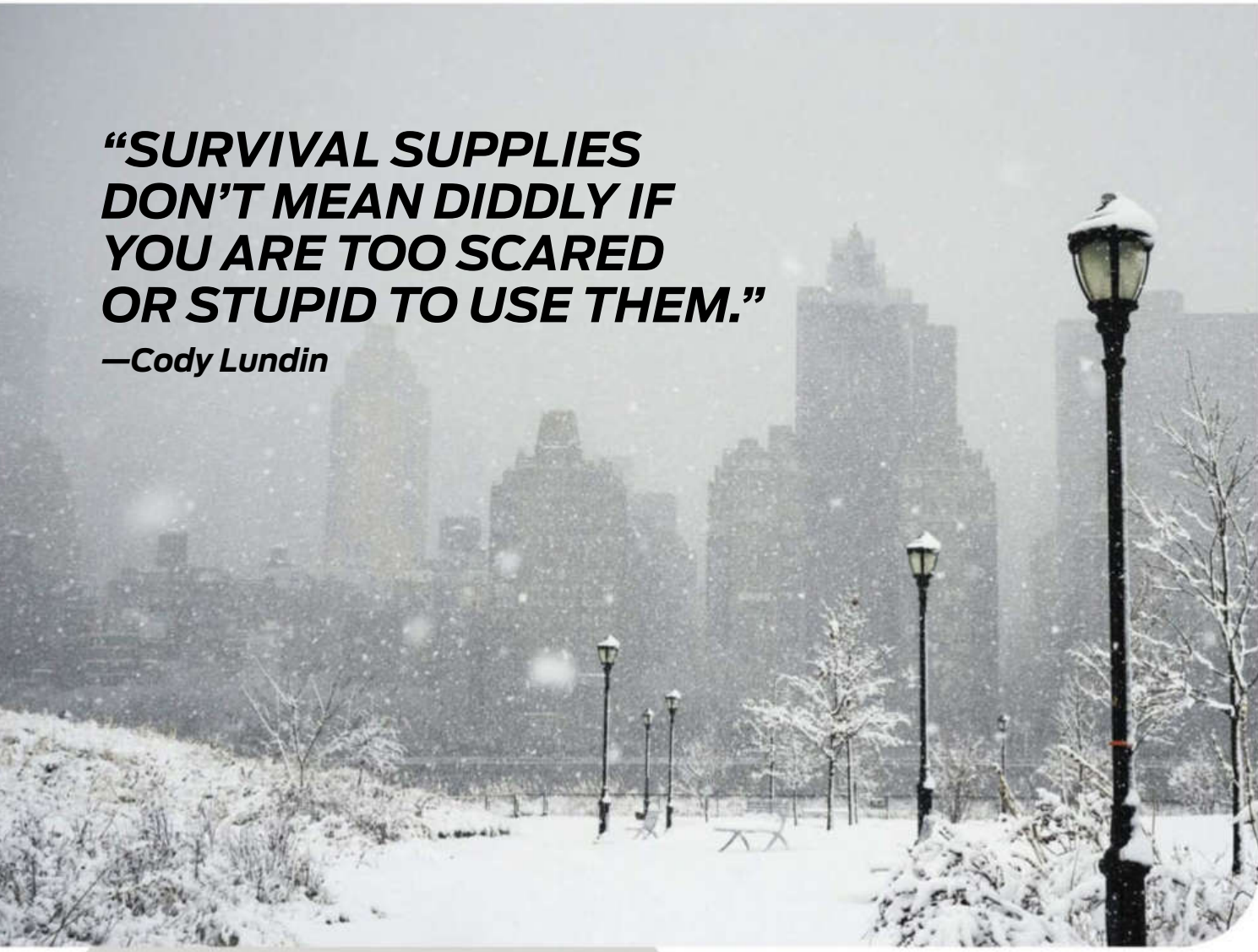
TORNADO

While hurricanes build up, tornadoes can spawn so rapidly that little warning is possible. As with any disaster preparation, the savvy survivalist is alert to the weather situation. There are several telltale signs that conditions are ripe for a tornado to spawn:

> Dark, often greenish sky
> Large hail
> Low-lying, dark, swirling clouds
> Loud roar akin to a freight train

Keep away from the windows. If the forces of the winds do not shatter the glass, the movement of the building or debris carried by the winds probably will. Most injuries suffered during a tornado are caused by flying debris. Make your way to an interior room, stairwell or hallway on the lowest floor possible, but keep away from large, clear-span areas such as sales floors. If you are trapped suddenly, find an interior room, and hunker down beside a sturdy piece of furniture, your arms over your head. Most high-rise buildings in hurricane- and tornado-prone areas have designated refuge areas in the building. Know where they are.

According to the National Weather Service, "As with any waterspout or tornado, the best advice is to be in an interior part of the lowest floor of a sturdy building—and not outside, whether sharks are raining down or not."



"SURVIVAL SUPPLIES DON'T MEAN DIDDLY IF YOU ARE TOO SCARED OR STUPID TO USE THEM."

—Cody Lundin

Evacuating Your Pet

Survivalists who bring their dogs into the workplace need to know that their pets will be rescued with them. After Hurricane Katrina, the Pet Evacuation and Transportation Standards were signed into law to address the needs of people with pets and service animals during natural disasters. The best chance your pet has to survive any disaster is with you. Do not think that it will have a better chance on its own. Keep your dog leashed and by your side to keep it calm. Check the American Veterinary Medical Association's website (avma.org/disaster) and the Humane Society (humanesociety.org) for detailed disaster preparedness information.



BLIZZARD

The situation: Working late on a project, you've not paid attention to the weather outside. The lights and your computer suddenly go off. A quick check on your phone, and you realize that it's 8 p.m., the winter storm watch has become a blizzard, and you are trapped inside your building. Is it going to be coffee and candy bars for the weekend while you wait out the storm? Is your smart phone charged? Do you have your external battery in your backpack?

Are you in a modern high-rise with emergency backup systems or an older one with boilers in the basement and radiator heat? If the backup systems have not kicked on, your best bet is to call maintenance or building management.

Often, you won't be alone in a high-rise building. There are cleaners, maintenance and/or security personnel who might be in the building with you. Round them all up, and pool

your resources. Someone might have keys to upper and/or warmer floors—such as the basement, where the boilers are situated in an older building—or you might be able to gain entrance to other offices, where you can raid their fridges or stashes of snacks in their lunchrooms. This isn't the time to be embarrassed about stealing someone's lunch from the fridge. (Do leave a note to be polite, if you do.)

Take stock of your situation. After alerting emergency personnel, loved ones, and probably your boss, the main thing you need to do is keep yourself warm, fed and hydrated. If you are a commuter, you will have a heavy coat, scarf, hat, and gloves. If you drive, go down to your car and grab your survival kit—the one with the emergency thermal blanket every driver in a state that experiences cold seasons should have. Unprotected heads, necks and wrists lose the most heat when left exposed to cold air. So, if you have a scarf and hat, put them on.

Do you have those large coffee thermoses in your office lunchroom? Fill them up with hot water while it is still available. Collect your food and water, hole up in a small office, and block any drafts. Do what you can do to keep heat from escaping by closing blinds and curtains. Conserve your smart phone battery, and remember to keep that warm, as well. If there are others with you, do not overlook the sharing of body heat. Several people in a small office will be warmer (even if you are not snuggling).

SURVIVAL READY

No book or website will provide you with a complete guide for disaster preparedness and survival. This article hits only on the key commonsense points, and the savvy survivalist will continue their own study and adjust for their own specific circumstances and needs. Remember the words of survival instructor Cody Lundin: "Survival supplies don't mean diddly if you are too scared or stupid to use them." ■■■



PHOTO BY GETTY IMAGES AND THINKSTOCK



Alternate Power Sources

Unconventional and Affordable Methods of Generating Electricity

Story by **Michael D'Angona**

THESE DAYS, EVERYONE IS PLUGGED INTO some sort of electronic device. Whether it's a cell phone, tablet, or GPS unit, the reliance upon handheld "assistants" is at an all-time high.

These portable devices take energy—in the form of batteries that need to be recharged, on average, nearly every day. Without constant power, they become virtually useless. Aside from stripping down various components to use as survival aids while under emergency conditions, these handheld devices become nothing more than useless pieces of metal, glass and plastic.

But there are solutions.

There are several unconventional means to recharge your devices. Choosing a recharging device is a decision based on your own personal needs. Those who travel light and are constantly on the move might opt for small, handheld units. Others choose portable turbines that are perfect for campsites or bug-out locations far away from urban settings; and still others choose solar chargers if they live in areas where the sun shines brightly throughout the majority of the year.

No matter which item you choose, you will rest more peacefully knowing that if your devices indicate "low battery," you will have the means to keep them running whenever and wherever you need them.

Here are 12 great products that will keep you "plugged in," no matter where you are.



Elevate Solar Backpack

Recharge while on the move! This durable backpack not only stores your gear comfortably, it also recharges your cell phone or GPS unit as you hike. Its large, waterproof solar panel converts sunlight into electrical power that adds 1 percent of battery life for every two minutes of exposure to the sun. It's that simple.

The backpack is constructed of extremely tough materials with reinforced stitching, premium zippers and closures for years of nonstop use. Enjoy a hike or long excursion in the woods, and take the worry of a dead phone battery right out of your mind.

The Elevate Solar Backpack comes with a full one-year warranty on bag construction and solar equipment.

Specifications

- Durable construction
- Reliable YKK zippers
- two minutes of sunshine equals one percent phone charge
- Black or gray exterior choices
- Lightweight solar panels
- Waterproof exterior

BirkSun.com
$169.99

Biolite Campstove

Turn fire into electricity. Yes, it can be done! The Biolite Campstove burns basic wood branches, twigs and sticks to create power for your electrical devices. Imagine boiling water or cooking a meal, all while charging your cell phone. This device is easy to set up, burns hyper-efficiently and produces little to no smoke. It produces 2 watts of electricity—perfect to charge cell phones, headlamps, LED lights and most other small devices. The Biolite Stove is a great addition for your bug-out location or to add to your "apocalypse" supply kit!

Specifications

- Powers most USB-chargeable devices
- 2W power output
- Uses renewable biomass fuel
- Stuff sack included
- Complete instructions
- Weighs only 2.06 pounds

BioLiteStove.com
$129.95





K Tor Power Box Pedal Battery Charger

No sunshine? No gas? No other fuels? No problem! With the K Tor Battery Charger, all you need is a little bit of human-powered movement, and your cell phones, tablets and GPS devices will run as long as you need. This compact piece of survival equipment is essential for every outdoorsman or survivalist. It folds down when not in use and can be easily transported in your backpack or camping bag.

When an emergency occurs and your devicesare low on power, this little item will become your number-one go-to tool. Simple pedaling can produce up to 20 watts of electricity without the need for additional fuels or solar assistance. All in all, the K Tor is a perfect off-grid backup power source.

Specifications
- Lightweight design
- Easily folds for storage
- Charges multiple types of devices
- Entirely human-powered
- Produces up to 20 watts of electricity
- Included instruction manual

EarthTechProducts.com
$195.00



Ampy Move

Imagine a device that converts your everyday movements into usable energy! That is exactly what you get from the incredible Ampy Move device. Just strap this incredible, lightweight device to your arm or leg, and convert your kinetic energy into usable energy. Fully charged, the Ampy can provide up to 24 hours of extra smart phone battery life—usable electrical power to recharge your portable electronic devices.

This device is ideal for survivalists, campers, hikers or anyone who is active and needs a backup power source. Having a continuously functioning GPS or cell phone when you are lost is a lifesaver, and the Ampy Move can make this happen. And when disaster strikes, every minute counts!

Specifications
- Charges by using kinetic motion
- Small, discreet size
- Provides 24 hours of battery life
- Easy to operate
- Charge from wall outlet
- Complementary app

GetAmpy.com
$99.00



Switch 10 Multi-Tool Kit

This kit can supply you with much-needed portable power, no matter where you are. The replaceable lithium battery is a lightweight, yet high-density, battery. It offers instant-on technology for easy plug-and-play power. Just use the included solar panels to fully charge the battery pack, and you are on your way to almost limitless power for all your USB devices.

The unit features an included 110-lumen flashlight—perfect for illuminating trails or reading. The small, but effective, fan attachment will keep you cool when temperatures rise. Tangle-free certified cords ensure efficient charging at all times.

Specifications
- Replaceable lithium battery
- Quick-charge USB port
- Easy plug-and-play power
- Attachable fan
- Delivers "smart" charging
- Wide-angle flashlight

GoalZero.com
$129.95

Pocket Socket 2 Hand Crank Charger

You don't miss things until they're gone, and, in the case of a dead cell phone, loss of power could spell disaster when you are lost or injured out in the wild. Avoid this disastrous scenario by carrying a portable, human-powered generator.

The Pocket Socket weighs less than one pound and fits easily into your backpack or jacket. When your "low-battery" indicator turns on, just give this little item a few cranks, and bring your dead phone back to life. It's great when out hunting, fishing or prepping for an unexpected future.

Don't rely on fuel that depletes or sunshine that may not show for days. This device guarantees recharging power when and where you need it.

Specifications

- Polycarbonate plastic construction
- Produces up to 10 watts of power
- Weighs less than one pound
- Easy-to-grip crank
- Compatible with American and European plugs
- Made in the U.S.A.

EarthTechProducts.com
$64.95





Powermonkey Expedition

A step ahead in portable charging technology, the Powermonkey Expedition can be charged in three ways: via hand-powered crank, solar or traditional AC power. This gives you options when the world goes dark and electricity to charge your devices is unavailable. The included solar panel is housed in very strong, yet lightweight, aluminum and is water- and dust-proof to withstand the punishment of the outdoors.

The handcrank provides one percent of power to the unit's battery after 10 minutes, allowing around five to six percent of your cell phone's battery to be charged—more than enough time to make any emergency calls. The device is designed to integrate wind- and water-charging options in the near future. The Powermonkey Expedition offers quality and versatility in one complete kit.

Specifications

- Waterproof housing
- Features both 12V DC and 5V USB outputs
- Uses a 32:1 gear crank ratio
- Foldaway crank
- Durable aluminum casing
- One-year manufacturer's warranty

EarthTechProducts.com
$599.99

Candle Charger

No power during a blackout? Guess again! Now, with the Candle Charger indoor generator, you can turn heat and water into useful recharging energy. Utilizing the included indoor burner and plain tap water, your cell phone can stay charged to contact loved ones during an unexpected crisis.

Setup is simple: Fill the water bath, light the candle, and plug in your electronic device to charge. Replace the water every 30 minutes or use it for emergency sterilization, if needed. With the Candle Charger, being left out in the dark doesn't have to leave you helpless!

Specifications

- Generates 2.5W USB power
- Safe for use indoors
- Recharges cell phones
- Easy to set up
- Perfect for blackouts
- Weighs only 11 ounces

FlameStower.com
$99.00





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The Best Emergency Radio

This unit offers dual functionality. It is one of the best emergency radios on the market today, offering crystal-clear reception. It also features a handcrank power addition that recharges your lifesaving cell phone. In comparison tests, this amazing device outcharged other units nearly 8 to 1. So, when you need power to call for emergency services or lifesaving assistance, you can be sure your cell phone's battery won't be "in the red."

The Best Emergency Radio's easy-to-use ergonomic handle requires little effort to produce exceptional results. It offers a USB charging port for most small devices, and it is constructed of water-resistant materials—useful when nature bears down on you full force. An integrated flashlight and solar panel round out this incredible piece of equipment.

Specifications
- Water-resistant construction
- Ergonomic handcrank lever
- Integrated LED flashlight
- Built-in solar panel
- Extra-long playback time
- Charges cell phones quickly

Hammacher.com
$99.95





Energy Hub

You never know when your electrical grid might fail. Be prepared with this portable energy center, which is perfect for emergency lighting or recharging dead electronic devices. During the day, use the sun's energy to charge the Energy Hub's batteries for needed power during the night. The unit includes two rainproof light bulbs that provide continuous light for up to 32 hours (one bulb on the low setting), and its USB ports keep your cell phones charged so you can contact loved ones during the outage.

No fuels, flames or dangerous chemicals are needed; just the power of the sun. Anyone can use the Energy Hub safely. It is a lifesaver when the world goes dark!

Specifications
- Simple setup
- Charging indicator
- Battery indicator
- Multifunction switches
- Integrated USB charger

FreePlayEnergy.com
$99.99



Switch 10 Recharger

Stay connected to the outside world when your phone batteries lose their charge. The Switch 10 is perfect for hikers or day adventurers. Because of its sleek, streamlined design, the Switch 10 fits easily in backpacks or back pockets and is ready to use immediately when your phone goes down. The unit charges via USB or optional solar power.

Electronic devices are now standard additions to most traditional survival supplies, so don't overlook this valuable portable power device.

Specifications
- Small and portable
- Ultralightweight
- USB port
- Solar charging option
- Simple design
- Durable construction

GoalZero.com
$49.99

ASG



Now you can pack light, literally with the Siege AA lantern from Streamlight. The Siege® AA boasts an impressive 200 lumens on high and 37 hours of run time on low. It packs in nearly all of the functionality and ruggedness of the original Siege®, just in a small, lighter body that uses three "AA" batteries. If you need maximum portability without sacrificing features, check out the Siege AA. It's the perfect Father/Son combination.

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A "Safe" House on a Shoestring Budget

HOW TO KEEP YOUR TEMPORARY SHELTER SECURE

Story and photography by **Joshua Swanagon**



PHOTO BY ERIN WILKINS / GETTY IMAGES

Fire is the great equalizer, reducing everything it touches to ashes. When devastation hits, scorching your neighborhood to blackened ruins, other accommodations must be made—and made quickly.

All your belongings are packed into a vehicle that's running on fumes. Hotels, hostels, shelters, and FEMA trailers are out of reach, and hoards of pillagers can be seen sifting through the debris. They would kill to get their hands on your supplies, so you've got to find a safe place to hole up—and there's little time to waste in making it secure.

You can use many different items in an urban or rural environment to aid you in shelter-building, but obviously, abandoned houses and other structures provide great shelter. However, finding safe shelter is another story entirely. Here's how to do it on a shoestring budget.

SECURITY CONCERNS

While in the woods, the biggest concern to your safety is the local wildlife, and, yes, it can be a concern. For the most part, wildlife will leave you alone. Building fires and hanging your food high in a tree are some good ways to deter animals from entering your camp.

However, in both urban and rural environments, people are the security threat ... and they aren't so easily deterred. In fact, building a fire is a good way to alert them to your existence and position—two things that are best to avoid in this current situation. *For the most part, being invisible is the key to survival on the streets.*

Finding abandoned homes or other structures may be among the best shelter you can get, but they can also be among the most dangerous. Keep in mind that even potentially more dangerous is the possibility that other people in your same predicament might also seek refuge in the same structure. That has the potential for being okay, but the reality of it is, most people unused to being in a survival situation can become desperate and willing to steal whatever meager possessions you may have and are probably willing to use violence to achieve that goal, if necessary. Consequently, it's best to take a few extra steps to ensure your invisibility and safety.

PICKING THE RIGHT ROOM

When you find the right house or structure to use for shelter, it is important to slowly and quietly walk through and make sure it isn't already inhabited; be very careful not to spook somebody; you don't know what they are capable of or what kind of weapon they have. Once you have cleared the house, you need to start thinking about the safest room in the house for you to sleep in. You don't want to just walk in the front door, lie down and start sleeping. Even if you are so tired you don't think you can go on any longer, you can—and you need to.

Ideally, you want a room that is farthest from any entrances into the house/structure, so that you have time to wake up and prepare for trouble when you hear your alert system triggered. It is also a good idea to find a room that, if possible, has only one window—you don't want too many access points into the room, but you also want to be sure you have an immediate exit point out of the house/structure.



Trip Line 101

KEY POINTS

❶ Small animals may set off the trip line, and it will be hard to get back to sleep afterward when your heart is pounding.

❷ When you get up in the middle of the night to take care of business, don't forget to step over the trip line. If you don't, you will startle yourself—making it hard to go back to sleep and causing a noise that could attract undue attention, as well (not to mention the frustration of having to reset it in the dark).

Door Alert Fundamentals

❶ If the door has a lock but you can't activate it with the door alert in place, using the lock is the better and safer option.

❷ If you are using the lock but cannot also utilize the door alert, you can still create an alert system; it just won't be quite as loud and definable. Most doors open to the inside, so you can simply stack your cans in front of the door or hang them from the doorknob for a minimalized alert system. Ideally, placing the cans on top of the door will cause far more noise when they fall (especially if the room is carpeted).

Avoid basements and second-story rooms. While you should make sure to check them during your initial sweep of the house, don't ever stay in them. Basement rooms generally only have small windows that are high on the wall, so they offer no real means of escape in an emergency; and second-story rooms will require a long jump if you need to evacuate quickly.

SLEEP SPECIFICS—MINIMAL VISIBILITY

The decision of where to actually lie down and sleep in the room you've selected is as important as the selection of the room, itself. As with everything else in this article, the main objective is *minimal visibility*. The key details to pay attention to are: which way the door opens (if possible, you want to stay on the opposite side of the opening); look for the darkest corners of the room; stay on the same wall as the window (so that when/if somebody looks in, they will not be able to see you); and pick an area of the room farthest from any/all opening(s). This will give you a little more time to realize when someone has entered your inner sanctum and to react appropriately.

SETTING UP EARLY-ALERT SYSTEMS

The whole point of this article is about security and setting up some form of early-alert system when you have nothing—no money, no gadgets and limited supplies (if any). Even if you have supplies, I recommend saving them, because you can find everything you need to build these early-alert systems for free.

This is the part that will take a little legwork, although you can be doing this throughout the day as you traverse the city while trying to find an appropriate shelter. I would recommend finding some kind of small bag for carrying everything. You can find bags near almost any grocery store, even if you have to look in the dumpster in the back (which will probably yield most of your supplies). Just make sure to find one that is clean and dry; you don't want to be carrying around a nasty, smelly bag.

You also want to find as much string as you can. It can be any kind: old shoestring, dental floss, twine; anything will do. You can't have too much of it. Even if you don't use it in your early-alert systems, cordage is a valuable commodity during any survival situation.

Finally, collect as much noisy stuff as you can find—pop cans, tin cans or anything that will make a good racket if you drop it on the ground. You will want quite a few of these items, as well, because you don't know how many doors and windows you will need to secure.

The only thing left to gather will be sticks. You can find them laying around the structure (after all, they're sticks; they're everywhere).

SETTING UP A TRIP LINE

Despite its name, a trip line isn't intended to actually trip an intruder (it may trip them up for a second, but it will be negligible). Rather, it is intended for use in a room that has no door—it's entirely possible that the home or structure you found is missing all its interior doors, so this might be your best (or only) option.

The most effective way to set this up is on the inside of the door for less visibility. If that is not possible, don't worry: Intruders will probably think it is just some innocuous trash if they can't see the string, itself.

Attach a string to a box about a foot off the ground (dental floss will work best, because it will be less visible). One easy way to do this is to tie a knot on the end and wedge it into the cardboard at a corner where the lid meets the box; this will hold it firmly in place.

Next, make sure you have enough string to go across the doorway with about a foot and a



half extending past the other side. Tie your cans to the end of the string.

Finally, take a stick with a "Y" shape at one end that is approximately the same height as the box, and lay the string through the Y with the cans hanging freely. Then, lean the stick against the doorframe and wall to hold it in place.

When someone walks through the trip line, it will bring the whole operation down, making enough racket to startle the intruder and wake you up.

SETTING UP A DOOR ALERT

Setting up a door alert is one of the easiest and quickest setups, but it is vital, because it is the main entryway into the home and/or room you are staying in. This setup will also work for windows, but here is a different setup for windows to show another option that will work for either:

Find a small twig that is very thin so it can be wedged into a tight spot. Simply tie your cans to the string, and tie the string to the twig.

Then, open the door just a crack, wedge the twig into the top of the door, and shut the door.

When the door is opened, the twig will dislodge, and the cans will come crashing down—causing enough commotion to startle a would-be intruder and wake you up.

The same setup will work in a window: Open the window a crack, place the twig under the window, and close the window down onto it. If you use a small enough twig, you should still be able to lock the window if it has a workable lock.

SETTING UP A WINDOW ALERT

For most windows, you can use the same alert system as you used for the doors, but, in the event you run out of string, there is another way. This one is a little harder, because there is a balancing act involved. Nevertheless, it is just as effective and will also work for a door.

Find two small twigs. Try to make them small enough for you to close the window as far as you can, hopefully enabling you to engage the lock (if there is a workable one installed) and one longer stick.

Open the window just a crack, place the two small twigs into the window frame and close the window down onto them. Then, weave the larger stick in between the two twigs parallel to the wall alongside the window.

Balance your cans on the stick, leaning them against the wall for support. (Note that for the photo, I used larger twigs so they are more visible. But you will need to use very small twigs for the actual setup.

When the window is opened, it will disengage the larger stick, causing the cans to fall to the floor.

PLAN FOR EVERYTHING

Ideally, you will never have to use any of these early-alert systems, but life has a tendency to move us in directions we never expect. We spend a lot of our time preparing for emergencies, disasters and "end of the world as we know it" scenarios, but sometimes, it is also important to prepare for the sudden possibility of losing it all. We never know what could come along and strip us of our worldly possessions and leave us with nothing but our minds to see us to another day.

However, the good news is that as long as we have knowledge, we have enough to get by. And remember: While you are spending your time and money gathering supplies to keep you and your family alive when things fall apart, make sure you are spending an equal or greater amount of time gathering the knowledge to live without those supplies. ASG

Window Alert Basics

1. As with the door alert, locks are always preferable. If the window has a lock and it is in good working condition, opt for it over the alert system. However, if the locks are old, they can be picked fairly quietly or broken fairly easily. In this case, stack your cans on the top of the bottom windowpane for your makeshift alert system.
2. Make sure you place the stick along the wall and far enough away from it so your cans are leaning inward. Sometimes, it looks as if your can is balanced, but it might fall in the middle of the night if it is not, giving you a false alarm.

Safe Room Checklist

1. Select a room that is farthest from any entrances.
2. Ideally, sleep in a room that has only one window.
3. Avoid basements and second-story rooms.

XTREME BLADE FOR XTREME SITUATIONS

E.J. SNYDER AND TOPS' SXB XTREME BLADE PERFORM IN THE FIELD

Story by **E.J. "Skullcrusher" Snyder** | Photography by Henry Z. De Kuyper

It's a blistering day on the Serengeti Plains in Tanzania, and I'm in the middle of a 21-day extreme survival challenge for the Discovery Channel's first season of *Naked and Afraid*. With my bare feet torn up, I was in desperate need of a pair of sandals that would last longer than the bark sandals I had been making. Equipped with only a combat fighting knife in one hand and a fire-hardened caveman club in the other, I was vigorously batoning through a piece of wood when the distinct sound of broken metal hitting the rocky ground rang out.

My only survival tool had broken.

Having your only survival tool break in a survival situation can leave anyone with a very uneasy feeling; for me, this was especially perturbing, because I was only halfway through the challenge. True, I was using the knife harder than it was intended. However, for me—a hardened combat vet and avid survivalist—that just doesn't cut it.

When you rely on your gear to get you safely off the battlefield, why shouldn't that be so when you are in a survival situation? When your life is on the line, second-rate, unreliable and weak gear can mean the difference between living and dying. I swore at that very moment that this would never happen to me again ... ever.

And that's why, along with TOPS Knives, I designed my own knife.



"THE SXB AND I HAVE CONTINUED TO PERFORM WELL AS A TEAM, AND WE BEAT DOWN THE BADLANDS OF COLOMBIA TOGETHER."

THE SEARCH

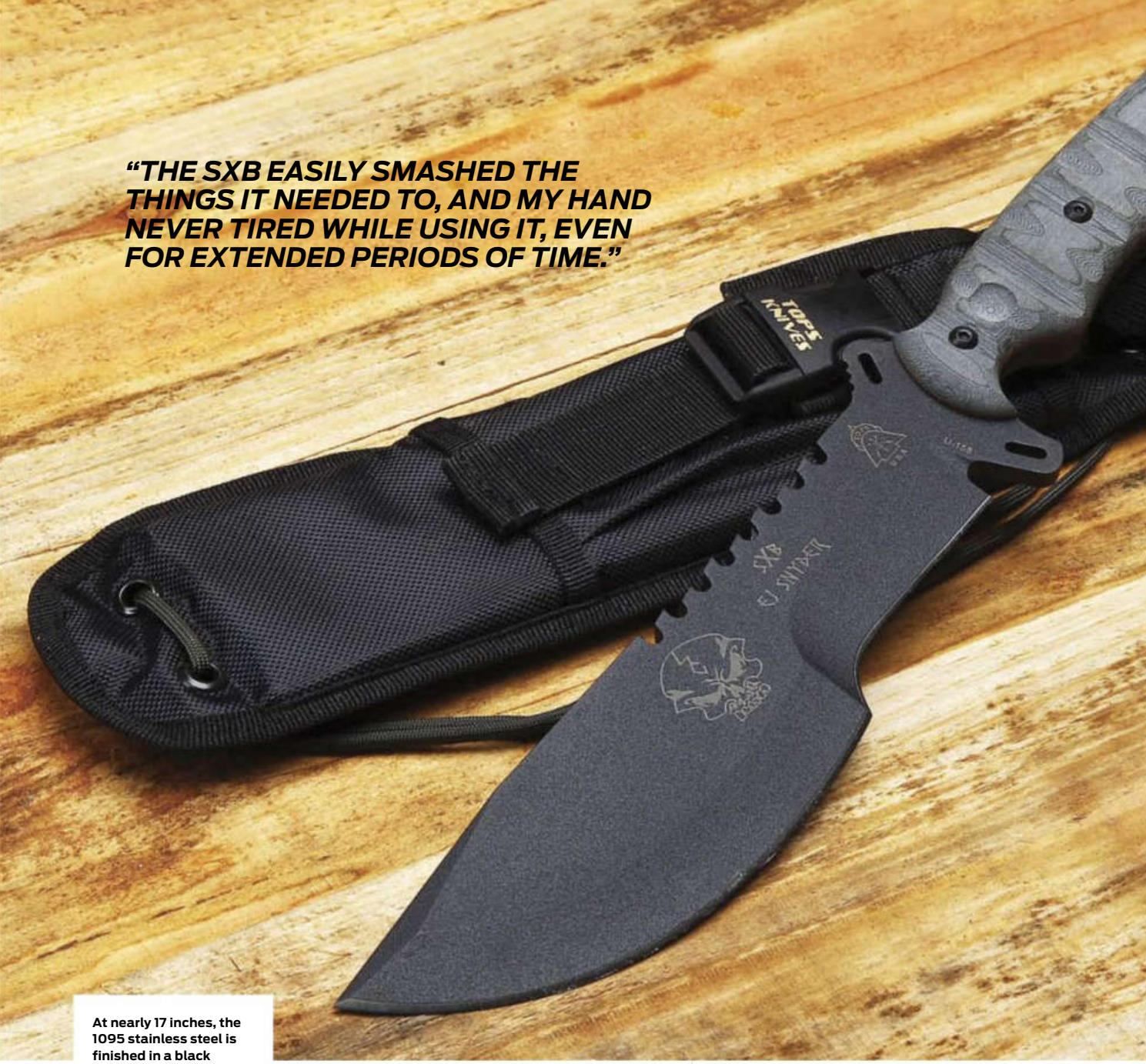
I successfully made it out of Tanzania a changed man and in one piece, but etched on my brain was that ringing sound of the metal pommel hitting the deck. Because I was also upset that my chosen knife had come up short on so many survival tasks, I was determined to find that one knife or tool that I could rely on to help get me out any situation, even if I were left out in the middle of nowhere.

I spent over a year testing many different blades, knives and tools trying to find my replacement knife. I met with many of my custom knife-making buddies to learn about what it takes to design and craft a great knife, get familiar with what they do and grow a deeper appreciation for the art of knife-making. I then immersed myself into to the study of steel, itself, so I could fully understand the differences and qualities of each kind of steel used in knife-making. I spent hours researching and conversing with knife enthusiasts with backgrounds in the outdoors, military, survival and hunting to see what their likes and needs were. After all this, I figured out one thing: I would never be able to create something that would please everyone, and that settled it. I would design a knife that would please just one person: me.

MY DESIGN

In the meantime, I had settled on a great knife to carry for a short while. I still keep it on my go-bag, but it wasn't my complete vision. What I needed was someone to believe in me and my design, perhaps someone who constantly inspired many great knife-makers and was influential in the knife community. I did not want to merely redesign or improve on any one already-existing blade; instead, I wanted one that would fit my needs, its function and fill the void in my sheath.

"THE SXB EASILY SMASHED THE THINGS IT NEEDED TO, AND MY HAND NEVER TIRED WHILE USING IT, EVEN FOR EXTENDED PERIODS OF TIME."



At nearly 17 inches, the 1095 stainless steel is finished in a black coating, while the sheath material is a sturdy ballistic nylon.

SXB IS BORN

At Blade Show 2014, Mike Fuller of TOPS Knives approached me with the offer I was seeking: to collaborate on a great knife design. We sat down to exchange ideas and, a month later, with the help of TOPS Knives' chief knifemaker Leo "Polo" Espinoza, I had the prototype in hand. At that time, it was called the SBK-9 Survival Battle Knife. I wanted to return to a Bowie-sized knife that could function as a combat knife for the soldier in me, as well as a survival knife for the survivalist in me.

After a month of testing, it was clear that it was all wrong. Its weight, the nonfunctional gut hook, its look and most all the ways it functioned were wrong. In addition, it simply just didn't feel right when I held it. I sent back my review, and two weeks later, I had another prototype in hand. As soon as I grabbed it, it just felt right, and it also didn't take long to see that what was wrong with the SBK-9 was very much corrected in this new beast. Immediately, I tried to find the right name for it but, in the end, only one name fit: The SXB—Skullcrusher's Xtreme Blade.

OFF TO COLOMBIA

I carried and tested the SXB over the next six months to make sure it was exactly what it needed to be. But one final test remained—the badlands of Colombia. Thrust into another extreme survival challenge for the Discovery

SXB'S PERFORMANCE

The SXB was asked to perform a multitude of survival tasks during my 40 days and nights in the Colombian jungle, and it performed well above expectations for me. It was an excellent chopper for cutting down trees during the construction of shelters and other needed survival items that had to be built. It excelled at cutting branches for firewood. Notching was a quick snap with the TOPS Knives signature saw teeth. The false edge on top was a great comfortable spot to hold onto for any scraping I needed to do. With the baton edge's careful placement, it made batoning very easy.

The drawknife functioned well, smoothly and with no interference. Feather sticks could be made easily, cutting when needed was a cinch, and shaping almost became a fun task. When it came to skinning, gutting and filleting, it couldn't be beat. The SXB easily smashed the things it needed to, and my hand never tired while using it, even for extended periods of time. The blade proved to be durable, reliable, tough, sturdy and unbreakable through very rough and rugged use in the jungle. It was tested alongside many other fine knives out there, and the SXB proved most impressive.



(above) **Cutting down saplings is made easier with TOPS Knives' signature saw teeth.**

(bottom) **The black linen micarta handle offers a sure grip in all weathers.**

TEAMWORK DOES THE TRICK

As I successfully dominate the *Naked and Afraid XL* arena, I knew TOPS Knives and I had built something very special. I also knew that if the SXB pleased me, it would please many other knife enthusiasts, as well. The SXB and I have continued to perform well as a team, and we beat down the badlands of Colombia together. I discovered—and proved—that "xtreme" situations require an "xtreme" blade.

Channel's *Naked and Afraid XL*, I was pitted against the Colombian jungle for 40 days and 40 nights, again with only one tool. It would be another test for me but possibly the first time ever that a knife would go through its final test on national television. They called it "marketing and knife-design suicide" for TOPS Knives, but I knew what I had designed was right. As a result, I was unafraid as I stepped into the jungle arena with all the confidence in the world by my side ... the SXB.



SXB SKULLCRUSHER'S XTREME BLADE SPECIFICATIONS

Overall length: 16.75 inches
Blade length: 10.38 inches
Cutting edge: 9.75 inches
Blade thickness: 0.250 inches
Blade steel: 1095 RC 56-58
Blade finish: Black traction coating
Handle material: Black linen micarta
Handle style: Rocky mountain tread
Knife weight: 26 ounces
Sheath material: Black ballistic nylon
Sheath clip: Molle backing
Designer: E.J. "Skullcrusher" Snyder

11.15

WHEN WILL HELP COME?

BEHIND THE SCENES OF A DISASTER RESPONSE

Story by **Charley Hogwood**





In the early morning hours of August 29, 2005, a Category 3 hurricane roared through the tepid Gulf of Mexico waters, causing massive storm surges and wind damage from central Florida all the way to Texas.

Hurricane Katrina was so devastating to the Gulf Coast that the emergency response systems in many areas were disabled, causing countless people to be left on their own with little to no help from authorities. Communication was almost impossible. Reports of damage and requests for assistance could not be transmitted, and responders were not able to report to duty.

No communication meant no permission from the state to interfere, so the federal government was unable to offer assistance where it was so desperately needed. People were left on their own—most times, confused or angry, because they had come to rely on the government to come to their aid.

And it all fell on the shoulders of FEMA … or so people think.

"PEOPLE WERE LEFT ON THEIR OWN—MOST TIMES, CONFUSED OR ANGRY, BECAUSE THEY HAD COME TO RELY ON THE GOVERNMENT TO COME TO THEIR AID."

PHOTO BY GETTY IMAGES

All-Hazards Approach

»Once you've identified potential threats in your area, try to take the "all-hazards approach." We cannot prepare for everything, but we can find the similarities between various hazards and prepare for those. This will simplify how your family prepares in general.

What does this mean? There are similarities between infection controls for the common flu and a pandemic: Both use similar equipment and skills, so you can combine your efforts when it comes to supplies. There are similarities in hunting and self-defense, in repairing your home after bad weather and building a shelter, and between camping and evacuating.

PHOTO BY POOL / AFP / GETTY IMAGES



PHOTO BY WESLEY BOCXE / GETTY IMAGES

BY THE NUMBERS

Under normal conditions, the average ratio of responder to citizen is approximately 1,000 residents to every one first responder.

WHAT IS FEMA?

It is not uncommon shortly after a disaster strikes to hear media and citizens criticize that the Federal Emergency Management Agency (FEMA) took too long to arrive on scene and offer support. Most people do not realize that FEMA is only a coordinating agency and does not actually perform a physical response such as search-and-rescue or food distribution. Once the president makes a disaster declaration, FEMA assists by providing logistical support wherever services are needed. FEMA does this through prearranged agreements with a multitude of government agencies and nongovernment contractors.

About the only direct contact FEMA has with the public is through disaster assistance, which is usually through financial grants or loans. FEMA will announce qualification criteria and may send inspectors or outreach teams into the field to verify qualifications or communicate with residents.

HOW IT WORKS: THE DISASTER RESPONSE SYSTEM

There are many moving parts in a severe disaster response-and-recovery situation, but here is how the system works: If a disaster event of national significance strikes local authorities become overwhelmed and state that assistance is requested. If state resources are not sufficient to deal with the crisis, the governor requests a disaster declaration from the president. If approved, FEMA responds by sending support from various agencies suited to the event.

Because of the levels involved, the system needs time to activate. Each increasing level of support cannot happen without an official request from the level of government just below it. Only in very extreme circumstances can federal agencies involve themselves without state approval first. These relation-

ships are outlined in the Stafford Act and, in some cases, an emergency declaration is initiated prior to an impending event to speed up the process.

So, how does the flow of information happen? Who are the first people on the ground right behind the initial local response?

In a major disaster event, personnel groups called "strike teams" are deployed to gather information regarding which areas need help and what type of help they need. We must understand that when lines are down and roads are blocked, the survey times may be severely delayed. During the damage assessment, survey reports are generated and, passed up the chain of command, each level organizes and prioritizes the work by deploying incoming resources, such as people and specialty equipment.

YOU'RE ON YOUR OWN

Until the pieces are in place—and even then, for some time afterward—you are on your own and might not see much happening. All responders will be on emergency duty in a severe event. Medical services will be very busy evacuating patients; law enforcement will be performing security operations; and utility crews will be surveying and clearing debris for travel and recovery.

Often, law enforcement combines into groups to assist one other and project an image of power, which further reduces the number of individual eyes on the street until outside assistance arrives. Another thing to note is that local responders may, themselves, be victims of the disaster and may not be available to respond to calls for assistance.

This was the case in New Orleans immediately after Hurricane Katrina. The entire police force was essentially incapacitated as a result of officers not reporting for work or unable to move about due to various constraints. The hospital system was busy evacuating patients, the disaster disabled a number of critical healthcare systems, and ambulance services were unable to move due to debris and flooding.

The citizen caught in any type of event that demands an emergency response should expect to experience restricted travel in and out of the affected area. The larger the event, the more restrictive travel will become. This is not only because of the authorities, but also by the very nature of the disruption.

There will likely be confusion and rumors to make the situation worse. It is imperative that emergency managers gain control of the situation as early as possible and quickly deploy the public information officer (PIO) to make a statement about what happened, what the public should know and what they should do and keep the message updated in a timely and consistent manner. Often, that can't happen because of power outages.

Sometimes, people are away from their homes when disaster strikes and are unable to return due to roadblocks. Roadblocks are not always official; panic travel, evacuation and debris will hamper movement. It is not uncommon for people to be prevented from returning home for extended periods of time. Once the restrictions are eased, you will need proof of residency or have a very good reason to be there.

ALL DISASTERS ARE LOCAL

»Even though Katrina was expected many days in advance, the collapse of communication severely disrupted the response at all levels. Pre-positioned relief supplies were caught in the disaster and destroyed, there was a lack of fuel for transportation, and poor communication resulted in resources being sent to the wrong places or expiring in the hot climate. Confusion and lack of preparedness turned a historic First World city into a complex human disaster zone reminiscent of a war-torn Third World region, with bodies in the streets and no one to recover them.

As we prepare, keep in mind that regardless of how bad the situation is, there will always be some form of authority. If you have a clear understanding of how that authority operates, you will know what to expect and how to react.

First of all, our emergency management system operates on the principle that all emergencies are handled at the local level first and then are expanded as needed. For example, you wouldn't expect a federal response to a car accident. The emergency management system is a connected flow of support based on the Incident Command System (ICS). ICS can be briefly explained this way: As an incident becomes too large to handle, more assets are systematically sent in to gain control.



PHOTO BY ROBERT GALBRAITH / GETTY IMAGES

What Should You Do?

»What does this mean for you in a disaster situation?

Chances are, you'll be without any real substantive assistance for at least several days post disaster, so 72 hours' worth of supplies is a bare minimum when it comes to planning. After some of the major hurricanes in Florida, neighborhoods were without power for several weeks and, in some cases, months. How would your supplies hold up? The same can happen after other disasters, such as earthquakes, major flooding, wildfires and even tornadoes.

Immediately after a severe event, you might be on your own for the most part—unless you planned for such an event by forming some sort of survival or mutual assistance group (MAG). You are looking to form a group of people who can provide support to each other in a crisis. In your hazard planning, you would be wise to seek out those around and near you who are assets to your family. Also be aware of those who might be hazards to your family. Remember that with low supplies and high tension, it's always best to be proactive rather than reactive.

During a Disaster

THESE ARE THE TOP 10 THINGS YOU NEED TO DO TO IMPROVE YOUR SITUATION IN A FEDERAL DISASTER RESPONSE SITUATION:

1
Know the hazards around your home and places you frequent.

2
Prepare with an "all-hazards approach" (see sidebar on page 78) for your situation to reduce the financial impact on your family and reduce the need for relief supplies from authorities.

3
Understand what the official response will be in case of a severe event in your area so you can make wise and timely decisions.

4
Have three safe evacuation routes —\in different directions.

5
Take all appropriate papers and identification when evacuating, including documentation to apply for disaster assistance, if needed.

6
Avoid conflict with authorities.

7
Know the new rules, including curfew times, travel restrictions, suspension of rights, etc.

8
Prepare with the critical supplies necessary to avoid standing in relief lines.

9
Secure and protect your supplies appropriately.

10
Do not invite trouble.



If the event is of a health nature, such as contagion, the standard operating procedure of the authorities is to contain, or, in other words, quarantine. In this case, everyone will be required to shelter in place as long as it takes, and all travel will be suspended in affected areas. An affected area may be as small as one home or as large as an entire region, depending on the threat. Once a disaster perimeter is established, law enforcement will begin to move about the affected areas and interact with the residents. Their mission at this point is focused on the health, welfare and security of all involved. If they feel someone is at risk, they might be evacuated/detained, and they might also remove any threats, such as weapons.

KNOW THE SYSTEM

The United States has a very robust emergency management system, but it is imperative that we understand how it works and how we may be affected by the official response. Everyone should conduct a hazard analysis for his own area to reveal what could pose a threat to himself and his family.

Most people think about severe weather, fires, earthquakes and such, which is smart, but start to think outside the box: What about technological disasters? Is there a dam nearby that could break or a river that could flood? Is there a chemical plant upwind or near your water supply? Do you live within two miles of a railroad that hauls freight and hazardous materials?



PHOTO BY DAVID PORTNOY / GETTY IMAGES

"IT IS WISE TO IDENTIFY VARIOUS TYPES OF HAZARDS AND PREPARE ACCORDINGLY."

These are all scenarios that could require a federal response and, in turn, affect your family. It is wise to identify various types of hazards and prepare accordingly. Knowing if and when to leave can be the most important decision you make; and if you understand what can go wrong, you can make better and timelier decisions if that time comes.

A helpful local resource is your Emergency Management Center (EOC). Call the center and ask about the hazards in your area and region. The center will already know and probably has plans to respond, should a hazard become an active disaster. The EOC will be happy to share this information with you so you can prepare properly.

EMERGENCY DECLARATIONS

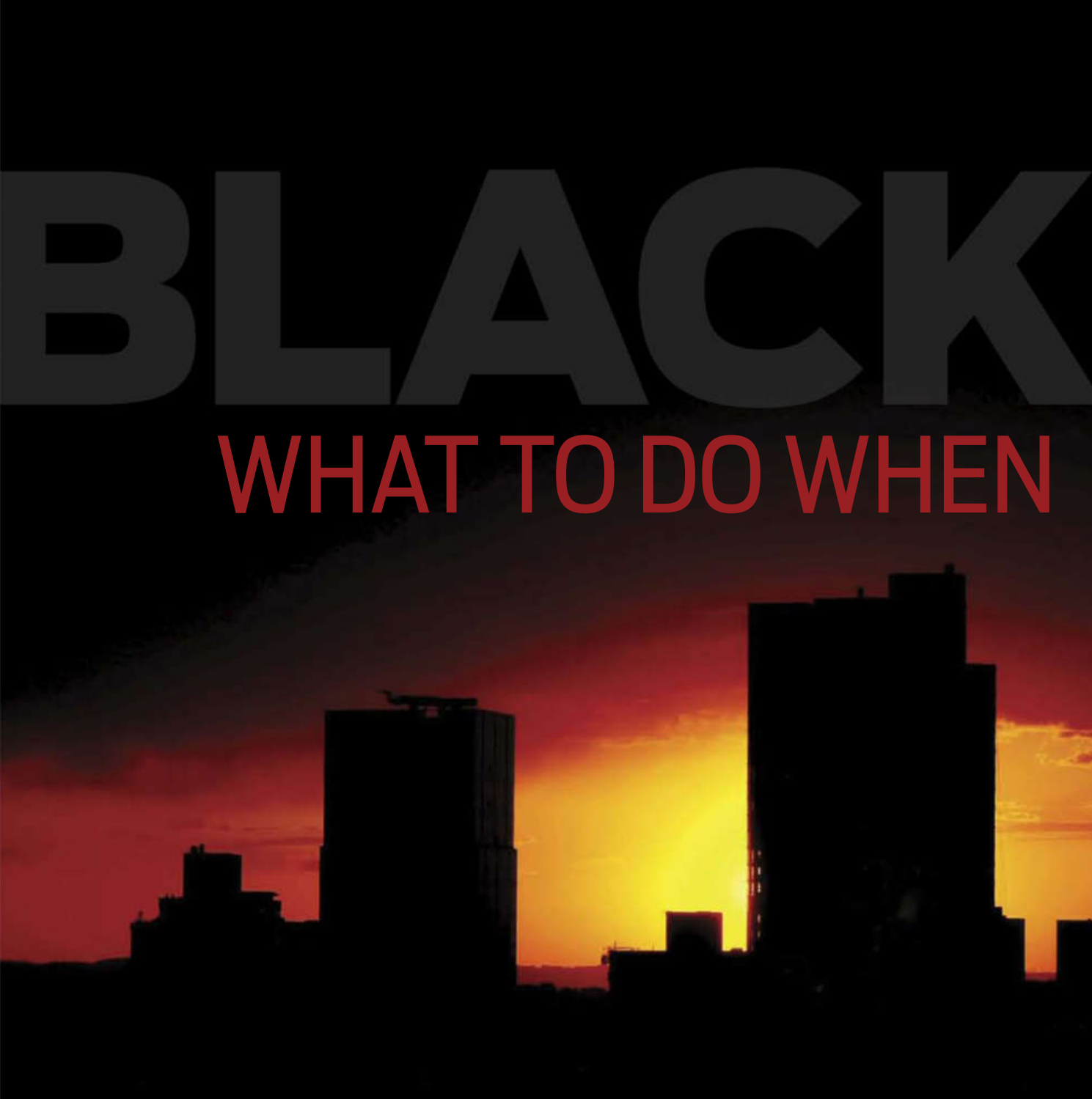
STATE BY STATE

SOURCE: FEMA.GOV

State	Disaster Declarations	Emergency	Fire Emergencies	Total
Alabama	58	11	9	78
Alaska	41	0	17	58
Arizona	24	3	52	79
Arkansas	59	9	0	68
California	80	8	151	239
Colorado	21	5	59	85
Connecticut	20	11	0	31
Delaware	15	5	0	20
Florida	67	12	57	136
Georgia	38	8	10	56
Hawaii	28	1	18	47
Idaho	23	2	13	38
Illinois	53	7	0	60
Indiana	41	7	0	48
Iowa	56	4	0	60
Kansas	51	4	2	57
Kentucky	61	4	6	71
Louisiana	61	10	1	72
Maine	41	14	2	57
Maryland	25	5	0	30
Massachusetts	30	17	1	48
Michigan	27	7	1	35
Minnesota	52	5	9	66
Mississippi	54	12	0	66
Missouri	57	8	1	66
Montana	24	2	42	68
Nebraska	52	3	5	60
Nevada	18	4	54	76
New Hampshire	33	13	0	46
New Jersey	6	12	2	50
New Mexico	29	4	48	81
New York	70	22	2	94
North Carolina	43	9	3	55
North Dakota	46	9	1	56
Ohio	47	7	0	54
Oklahoma	76	10	86	172
Oregon	29	2	63	94
Pennsylvania	49	9	0	58
Rhode Island	12	10	0	22
South Carolina	16	4	3	23
South Dakota	45	2	21	68
Tennessee	54	3	6	63
Texas	89	13	235	337
Utah	11	3	19	33
Vermont	40	3	0	43
Virginia	47	7	7	61
Washington	48	7	84	139
West Virginia	56	8	2	66
Wisconsin	37	7	1	45
Wyoming	10	2	15	27

BLACK

WHAT TO DO WHEN



"A MASSIVE POWER OUTAGE COULD TAKE WEEKS OR MONTHS TO RESTORE ... "

OUT!

Story by **Nathaniel J. Cohen**

THE GRID GOES DOWN



PHOTO BY RAMZI RIZK / EYEEM / GETTY IMAGES

THE CITY OUTSIDE YOUR WINDOW IS GRAVEYARD SILENT, AND OTHER NEIGHBORS IN YOUR BUILDING ARE PEERING FROM THE FIRE ESCAPES AT A COMPLETELY BLACKENED CITY. LOOKING UP INTO THE NIGHT SKY, IT'S AS IF SOMEONE JUST TURNED ON ALL THE STARS, AND BLUE/GREEN AURORAS ARE SWIRLING IN THE NORTHERN SKY. SIRENS BEGIN TO WAIL OFF IN THE DISTANCE, AND AN UNEASY CHILL TELLS YOU SOMETHING ISN'T RIGHT.

There are no lights, no Internet, no satellite television, and no radio. Only your cell phone can provide you with a drab cone of light.

The earth has just been hit with a massive geomagnetic solar storm of a magnitude that the world hasn't seen since the Carrington Event of 1859. Satellites are tumbling lifelessly in orbit, and power grids and communication networks are failing across the country. The power is not coming back on for a long, long time, so you and the nine million other people packed into a 50-square-mile city setting will have to make do without it.

But how?

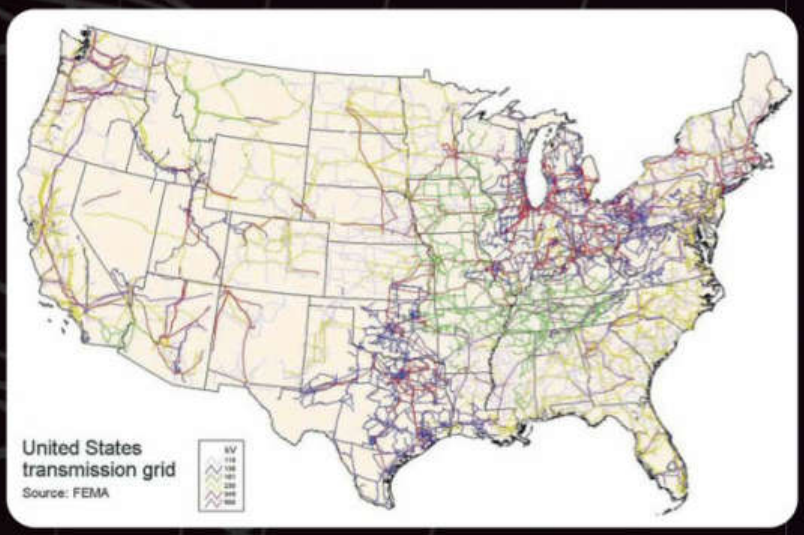
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11.15

THE NATION'S POWER GRID

Despite the power of electricity and all it can do in our modern civilization, the power grid in most major cities is quite a fragile thing. From the thinly strung-out infrastructure of the electrical system to the vulnerable "smart grid" that is being implemented across the country, it wouldn't take a great deal of effort to bring the whole thing crashing down.

Threats such as a malicious cyber attack, the rise in fuel costs, or a simple overloading of the system can bring down the entire grid in seconds—blacking out not just your street, neighborhood or town, but entire states and/or regions of the country, as well. A massive power outage could take weeks or months to restore; meanwhile, our reliance on electricity has stopped us dead in our tracks.



"THREATS SUCH AS A MALICIOUS CYBER ATTACK ... CAN BRING DOWN THE ENTIRE GRID IN SECONDS ... "

WHEN THE GRID GOES DOWN

First off, don't panic. The immediate stillness that washes over a once-buzzing house can be a little disturbing. Check to make sure your main circuit isn't tripped, and verify with your neighbors that their power is also out. You can guess why it is out, but unless there was a major accident, the odds are good that it will only be out for a few hours to a couple of days at most. Your local power company should notify you—provided it is not battling some catastrophe that is more important than you.

With the power out, essential businesses such as government operations, hospitals, and other utilities will need to rely on generators for backup power—if they have them. The rest will go dark. The bank, gas station, grocery store, and big-box stores might rely on generators for a while, but most will simply close their doors, being unable to transact business without computers.

However, those generators require fuel to run, which will drain the supply for local inhabitants. It won't take too long for either a mass exodus out of the affected area to occur or for widespread looting and an increase in "survivor crime," where otherwise law-abiding citizens will commit crimes to fulfill basic needs such as food, water, and medicine.

Because you live in the city and rely solely on public transportation, you're not going anywhere—because the bus and train lines will immediately stop working, and there's no way you want to walk it out (plus, where would you go?). You'll have to make do with what you have. And what you should have is a well-equipped emergency pack that contains a host of gear that will keep you sustained for a long period of time.

However, you will have to address a couple of things your emergency pack might not have: food and water.

FOOD

What Will Happen: First off, don't open your refrigerator until it is absolutely necessary. Make a mental list (or write it down) of everything you think you have in there and plan your future meals accordingly. Once the fridge's temperature rises above 40 degrees F, meat, poultry, and seafood have a shelf life of only a couple of hours. This also holds true for soft cheeses, eggs, fresh-cut fruits, creamy dressings, and any dairy products such as milk, sour cream, and baby formula. After that two-hour mark at 40 degrees or higher, bacteria will start to set in and quickly ruin the food. This same guideline also applies to the freezer. Keep anything that still has ice crystals and feels cold to the touch; but once it is thawed, it is headed downhill quickly.

Hard cheeses, such as cheddar, Swiss, and Colby, can withstand an increase in temperature, and they will be safe to eat (just cut off any mold that might grow). Open mayonnaise jars and any jams/jellies should be discarded after about eight hours of temperatures of more than 40 degrees.

What You Can Do: Closely monitor the temperature of your refrigerator. When it approaches that dangerous 40-degree threshold, transfer the expendable foods from the freezer to the refrigerator. Things such as bags of peas and corn, ice packs, ice trays/the machine's reservoir, frozen pie crusts, Grandma's fruitcake from last Christmas—anything you might not eat unless you're desperate—can be placed in the fridge. The frozen foods will begin to thaw and, as they do so, they will help keep the fridge's essentials—milk, meat, eggs—colder longer.

If it is snowing outside (or it is below freezing), use the snow or make ice to keep the fridge cold instead, treating it as an old-fashioned icebox.

Help your refrigerator work as efficiently as possible by pulling it about two feet away from the wall. This will allow for more air to flow around the heat-dissipation coils. Better still, position the fridge so those coils face an open window, where cooler air or a breeze will help keep them from getting too hot.

Meanwhile, you can begin construction of a DIY evaporation cooler called a "zeer." Take two porous terracotta pots of different diameters and place one inside the other. Fill the space between the two pots with wet sand. Place your food inside the first pot, and cover it with a wet cloth. Place the unit in a cool, dry place, and keep the sand and towel wet.

What You Should Do: With any emergency, preparation is key. In order to prepare for a power outage, fill a dozen or so plastic bottles with water and freeze them. When the power goes out, they will act as ice packs in your fridge to keep your food colder longer. If you have a generator, you should have very little short-term worries. Power up the fridge with the generator, but only let it run long enough to keep the temperature below 40 degrees. Turn it off to save power so the fuel will last longer.

Before you need it, invest in a cache of freeze-dried foods that can be stored for a long time and take very little resources to prepare. A good supply of canned goods—fruits, condensed milk, beans, meats—will last a very long time, and with a two- or three-week supply, you might weather the situation just fine.

Have a barbecue or camp stove at your service, with plenty of available propane. Better yet: A wood-burning stove or fireplace will help cook most any food. If you're remotely handy, a solar oven can be made with a pizza box and some tin foil.



PHOTO BY JEREMY KOHM / EYEEM / GETTY IMAGES

WATER

What Will Happen: Soon after there is a mammoth, widespread power outage that affects millions of people and great swaths of territory, the water supply will also be affected. Pumps, valves, timers, and substations in your city that provide enough water pressure to keep your faucet running will stop working. This means that you have a very short time to gather as much water as you can. *Water is key to every aspect of your survival. Without it, you can't stay there. Period.*



What You Can Do: Stop up the drains of all your bathtubs and fill them until the water stops running. Collect as much water as possible in the shortest time possible. A person needs about a gallon a day, so plan accordingly. If you have gutters on your house, put collection buckets under them in case it rains. String a tarp across your balcony or lay it at an angle on your lawn so rain runoff can collect in a bucket.

If you live in an older-style apartment building, those tanks on top of the buildings are the water supply for the building. Water is pumped up from the ground and stored there, but the interesting part is that most of the old-style tanks are syphoned from the top and fed into the pipes below. As a result, as soon as the pumps stop working, there are still perhaps many thousands of gallons of water in there.



"THOSE WHO ARE UNPREPARED AND SEE IN THE PITCH DARKNESS A WHITE BEACON EMANATING FROM YOUR HOUSE WILL BE DRAWN TO IT LIKE MOTHS TO A FLAME."

PHOTO BY GETTY IMAGES

11.15 BLACKOUT!

Realize that there are dozens of gallons of water around your house or apartment—from the 50 to 70 gallons in the water heater to one or two in the toilet's reservoir tank. And when your freezer starts to defrost, find a way to capture that water, as well.

What You Should Do: The idea is to have one gallon of water for each person for each day the power is out. In order to stay put as long as possible, you should have a large cache of water available for just such an emergency. Even if you think you don't have space, there are many options for water storage, from small to large. For example, Water Bricks (waterbricks.org) offers stackable, 3.5-gallon containers for storing water. No room? Stack them to create a nightstand and cover them with a cloth.

Start collecting cases of water and stash them wherever you can find space—under the bathroom sink, under your bed, etc. Invest in a WaterBOB (waterbob.com), a food-safe plastic bag that can hold up to 100 gallons of water in your bathtub. Construct or have ready a rainwater collection system, and don't forget to prepare a variety of water filters to clean the water.

LIGHT AND POWER

What Will Happen: Depending on the type of catastrophe, you might not just be out of electricity. Certain solar activities can disrupt electronic communications, but other kinds, such as an EMP from a solar mass ejection, can completely fry any electronic device. That remote control to your ceiling fan, the coffee maker, your cell phone, your car's ECU, the elevator? All toast. And unless you're a handy electrician, they're going to stay toast until they're replaced. That means you'll have to time your life around the rising and setting sun if you don't have the proper gear.

What You Can Do: Stumbling around in the dark isn't going to help your cause, so you'll have to provide your own sources of electricity. Break out your solar-powered lantern and your dynamo-powered radio. Flashlights take batteries, which will eventually go bad, making the flashlight useless. Save those for special circumstances, keep extra batteries, or have alternative methods of charging. Avoid using candles, because they are fire hazards, but don't discount lighting up your living room with a fire in the fireplace. Plus, it will keep you warm, and you can boil some water to drink later.

What You Should Do: There are several companies offering power packs charged via solar that provide a great source of electricity for a variety of devices. Perhaps the power is out, but your cell service is still operational.

Keeping a small, well-maintained generator will provide electricity for most lights and the television (you might still be able to tune in to some OTA programing). Eventually, your generator will run out of fuel (that is, if you have a generator); therefore, you'll need to rely on other sources of energy for light. Also consider keeping handy a 1,000-watt inverter to connect to your car battery to run/charge small appliances. Prepare an old-fashioned gas/mantle lantern, but make sure you have plenty of propane and extra mantles.

Modern-day oil lamps are a great way to light a space, and the oil will last a lot longer than batteries. Make sure to have enough lamp oil in reserve.

HARVESTRIGHT

FREEZE DRY ANY FOOD AT HOME

YOU NEVER KNOW WHEN DISASTERS WILL STRIKE



FOOD LASTS 25 YEARS

Freeze dry **ALL** of your meats, dairy, fruits, vegetables, and more! The food will retain its taste, color, and **97%** of the nutrients for 25 years.

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MADE IN AMERICA

LONG-TERM POWER OUTAGE

»Most power outage situations are temporary—a couple of days at most. Even in severe natural disasters, such as the blizzards that pound the East Coast, the tornados in the Midwest, and the earthquakes in the West, a stricken neighborhood will be more concerned with the natural disaster than that they are without power. At most, in the wake of a hurricane, power will be out for three to four weeks, depending on the severity of the event.

In this case, no amount of work on your part will keep the food in your fridge cold. If you haven't already eaten it, do so before it goes bad. From here on out, you'll have to rely on dried foods. Hopefully, you have a large store of these.

Society, as it always seems to do, will spiral into chaos as quickly as the food and water run out. Don't be caught in the maddening melée of the cycle of looting that will, no doubt, spill into your neighborhood. At first, it will be greed-based looting—electronics and clothing—but then, when they figure out the televisions won't work and the milk has curdled, they'll be back for the second round, cleaning out the supermarkets and grocery stores.

Avoid getting involved in this, because it will be violent and very dangerous. This is why you prepare. This is why you have lanterns (both kinds), generators and fuel, water, and nonperishable foods on hand. This is why you have learned how to protect yourself, to be aware of the signs of danger, and to take caution in every activity you do from here on out.

Eventually, you'll either have to relocate to a different region, or the power companies will rebuild whatever infrastructures were damaged. Until that time, stay put, and stay safe.

"THE IDEA IS TO HAVE ONE GALLON OF WATER FOR EACH PERSON FOR EACH DAY THE POWER IS OUT."

OTHER GEAR

Don't forget to take into account any medicines you and your family might need—from insulin for diabetics to an EpiPen for those with severe allergies. Something as basic as a migraine or the flu could prove disastrous.

An ample stock of first aid supplies will be necessary, especially if the event that knocked out the power grid was environmental. There will be damage, and the potential for injury will be significantly higher. Any well-stocked, family-sized first aid kit will come complete with the needed gear to fix anything short of a broken bone.

Take your pets into consideration. They will need food and water just as much as your family will, so make sure to have enough for them. Also, there are a few specialized first aid supplies available for dogs and cats that you should keep in your cache.

BLACKOUT CONSIDERATIONS

In a real survival situation—where it is the end of the world as we know it—the power grid will be the least of your worries. You'll need to focus your energies elsewhere. Those who are unprepared and see in the pitch darkness a white beacon emanating from your house will be drawn to it like moths to a flame. They will assume, correctly, that because you have light and power, you have spent time and effort preparing for disasters and will have a host of food and supplies to withstand whatever may come.

Protect yourself by not advertising your ability to persevere. Use heavy blankets to black out your windows, a length of tape to keep the light from spilling out under your front door, and don't forget to block the peephole. If you have to go outside with your light, use a small flashlight, and keep the light directed only exactly where you need it. Skills used in protecting your perimeter will be helpful here. If your house or apartment looks like just another victim of the blackout, thieves bent on taking advantage of your stash might just overlook it.

If it is hot outside, try to go to the lowest level in your home, such as a basement, to stay cool (cool air falls, and basements are usually underground) or, if you don't have a basement, find an interior room away from outside walls. Wear light, airy clothing, and drink plenty of water.

If it is cold outside, layer up your clothing. Don't use your gas oven as a source of heat. Close all blinds, and gather in a small room that is preferably on the southwest area of the house, where the sun will hit it the most.

If you have to drive anywhere, make sure you have enough fuel for the return trip, because gas stations rely on electricity to power the pumps. Watch out when you are on the road. Treat traffic lights as four-way stop signs. Drive slowly, and maintain focus, because other people may be in a panic and not able to concentrate.

Because you're still eating, that food has to go somewhere. Although your toilets work without power, eventually, the sewer lines might become clogged. If so, you'll need to create an area in your yard for a latrine. Consider a slit trench, or invest in a series of disposable bio-waste bags to use as a makeshift toilet.

FOCUS ON IMMEDIATE TASKS

Realize that having electricity isn't as important as society makes it out to be and that you are a survivor with the knowledge and proper gear to withstand nearly anything. In a true survival situation, focus on your immediate safety from threats, the security of your shelter, and food and water first. Your games of Candy Crush can wait until the power comes back on.

SEEING IN THE DARK

A LOOK THROUGH THE ATN PS15-2 NIGHT VISION GOGGLES

» THE ATN PS15 IS A COMPACT, lightweight, dual night vision goggle system. It utilizes two high-performance Image Intensifier Tubes to provide extremely clear and crisp images under the darkest conditions. The dual-tube design provides increased depth perception and outstanding clarity. A built-in IR lets the user easily read a map and function in a total darkness environment.

Available in a wide array of Image Intensifier Tube configurations, the ATN PS15 Night Vision Goggles are designed to handle every budget and mission requirement. The ATN PS15 Night Vision System is the high-performance choice!





PHOTOS BY HENRY DEKUYPER

Features

- Depth perception
- Waterproof
- one 3V (CR123A) or one 1.5V (AA type)
- 1x magnification
- Hands-free usage
- One-knob operation
- Automatic brightness control
- Comfortable flip-up headgear

atncorp.com | $3,699

Specifications

- Dimensions: 4.7x4.5x2.7 inches
- Weight: 1.54 pounds
- Resolution: 40-45 lp/mm
- Signal-to-noise ratio: 12-20
- Mean time before failure: 5,000 hours
- Magnification: 1x
- Lens system: F1.2, 27mm
- Field of vision: 40 degrees
- Range of focus: 0.25 yd/m to infinity
- Automatic brightness control: yes
- Bright light cutoff: yes
- Infrared illuminator: built in
- IR indicator: yes
- Low-battery indicator: yes
- Power supply: one CR123A or one AA
- Battery life: 25-60 hours
- Environmental rating: waterproof
- Operating temperature: -40°F to +122°F

MUST-HAVE GEAR FOR WHEN THE LIGHTS GO OUT



EcoZoom Versa Rocket Stove

EcoZoom's Versa rocket stove offers the flexibility to cook with wood, charcoal, or solid biomass fuel in a rugged stove. The insulated combustion chamber forces gases to mix with flames, thereby decreasing harmful emissions while boasting great fuel efficiency. The combustion chamber and top door insulation are lined with a refractory metal to provide ultimate durability. Both the main combustion chamber door and the damper door (bottom door) have reinforced metal frames with hinges that securely close the doors and regulate airflow. The rigid, stainless steel handles are covered with silicone grips to ensure they stay cool, even when the stove is hot. Please note that this stove is not rated for indoor use.

Specifications

- Dimensions: 11x11x10
- Weight: 14.25 pounds
- Uses wood, biomass, and charcoal

ecozoomstove.com
$129.95



Berkey Light Water Filtration System

The Berkey Light water purifier can be used in any setting, but it was originally designed to be a lower-cost, lightweight, portable unit. The Berkey Light holds 2.5 gallons of purified water and is ideally suited for outdoor and emergency use: It requires no water pressure and no electricity and can provide pure drinking water from almost any source. The lightweight BPA-free poly material is extremely durable, making it dent- and shatter-proof. The two black Berkey filters that come with the unit are good for up to 6,000 gallons of purified drinking water.

Specifications

- 2.5-gallon capacity
- Dimensions: 9x28 inches
- Weight: 7 pounds (empty)
- High-quality, BPA-free, food-safe material
- Easy-flow spigot

berkeyfilters.com
$231.00



Voyager Radio

Looking for a survival radio with all the bells and whistles? If so, the Kaito Voyager emergency radio with dream features should be your first choice. It features a staggering six options to power this essential tool: solar, crank, AA batteries, AC adapter (optional), rechargeable battery pack, and USB charging port. This radio receives AM, FM, SW1, and SW2 signals, as well as seven standard weather bands and a weather alert feature that activates whenever critical information is relayed. The Voyager also doubles as a campside, five-LED reading lamp and offers two emergency signals (red and white), used to indicate the severity of your personal survival situation. The Voyager is perfect to store in your car, cabin, and alternative bug-out location or anywhere you need an invaluable, multifunction helping hand.

KaitoUSA.com
$69.95



Honda EU2000i

The Honda EU2000i inverter generator is very quiet, easy to carry, and fuel efficient, making it ideal for TVs, small appliances, and basic lights. The stable power allows for safe use of computers and other sensitive electronics. With a very low 59 decibels at max power, it is perfect for an inconspicuous source of power. It is small—about the size of a gym bag—and light, at only 47 pounds. It can last nearly 10 hours on one gallon of gas and can provide 1,600 watts of continuous power.

Specifications

- Rated watts: 1,600
- Disp. (cc): 98
- Run time: 9⅝ hours @ ¼ load
- Receptacles: two
- Parallel-ready: yes
- Noise (dB): 59
- Fuel: gas
- Dimensions: 20⅛x11⅖x16¾ inches
- Weight: 47 pounds

honda.com
$999.99



Goal Zero LightHouse 250

The Goal Zero LightHouse lantern offers the best of several different worlds when it comes to rechargeable power. It offers three ways to recharge the batteries: via USB, plugged into any computer or USB outlet (cable included); via the solar panel mounting on the lantern's top; or via the handcrank. Use the energy to power the light, to operate a flashing, red beacon light that rings the hood, or even charge a smartphone or tablet. The light is dual directional, meaning you can light up on half or both. A full charge from the sun or a USB takes about seven hours, while a turn on the crank for a minute or two will give about 20 minutes of light. When fully charged, however, the batteries will last for 48 hours with the light on low.

Specifications

- Weight: 1.1 pounds
- Dimensions: 4.5x5x6.6 inches
- Battery cell type: Li-NMC
- Cell capacity: 16.3 watts
- LED (output): 250 lumens

goalzero.com
$79.99

Some folks just like to do things for themselves.

For those of you who do, Del-Ton has a complete line of rifle kits to fit any need or budget.

Del-Ton is a manufacturer of quality AR-15-style modern sporting rifles and your online source for parts, upgrades, optics, and accessories. All rifle and kit components are made in the U.S.A.

16" M4 Rifle Kit (RKT 100) / MSRP: $510



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Gear Guide.11.15

Illuminate Your Escape

Fenix Tactical HL30

If you're hiking through wet terrain, the Fenix Tactical HL30 is an exceptional option. Waterproof up to 2 meters for 30 minutes, the HL30 has the ability to stay protected and useful while also producing a 230-lumen output at a 68-meter beam distance. Its rugged, aluminum housing and waterproof construction make it virtually indestructible in the toughest situations. Never be caught in the dark again with this heavy-duty, high-strength headlamp.

Specifications

- Weight: 3.00 ounces
- Lumens: 230 (burst)
- Waterproof: IPX-6

FenixTactical.com
$56.00





Petzl Pixa 2

Keeping your hands free in a survival situation can determine life or death. Petzl's Pixa 2 does that, and more, because it offers multiple facets of accessibility to help increase vision. Wear it on its headband to stay mobile in a survival situation, or attach it to a helmet with a mounting plate for other outdoor use. This dual-purpose headlamp utilizes constant lighting technology in conjunction with two lighting modes to adjust to whatever your needs might be.

Specifications

- Weight: 5.6 ounces
- Technology: constant lighting
- Two lighting modes
- Watertightness: IP 67 (waterproof to -1 meter for 30 minutes)

Petzl.com
$59.95

Black Diamond Icon

If you're looking for a headlamp with high-output lighting, this is the one. Providing a 320-lumen output, the Icon Headlamp is great for any demanding adventure—expected or otherwise. It is waterproof up to 1 meter and has a lighting range of up to 100 meters. It features full-strength, dimming, strobe, and red night vision settings and lock-move settings, allowing you to pinpoint the vision assistance appropriate for whatever conditions you might be facing.

Specifications

- 320-lumen QuadPower LED
- Waterproof construction
- Lighting settings: full-strength, dimming, strobe and red night vision; lock-move
- Lighting range: 100 meters

BlackDiamondEquipment.com
$89.95



12 Headlamps That Will Light Your Path in Even the Harshest Conditions

Story by **Hannah Spangenberg**

WEARABLE ILLUMINATION can be essential in a survival situation. Whether you are prepping for an unexpected crisis, facing a dire situation, or wanting a portable light source for everyday use, these wearable sources of illumination are vital. They range from high-tech, top-of-the-market headlamps to affordable, lightweight, everyday-use products. Read on to choose which headlamp is best for you.



Princeton Tec Sync

The entire family can easily use Princeton Tec's Sync headlamp. We cannot forget about making sure we are prepped for our children, as well as if a disaster arises. The easy-to-use design allows direct access to a red LED, spot beam, and flood beam via a twist of the power dial. It powers 90 lumens and has a burn time of 200 hours, making it a great option for long-term use.

Specifications
- 90 lumens
- Lamp: dual beam, spot, high flood, low flood, red
- Burn time: 200 hours
- Weight: 2.93 ounces

PrincetonTec.com
$29.95

Nite Ize Inova STS

If you're in need of some hands-free illumination that produces high lumens but is also in the lower end of the price spectrum, the Inova STS headlamp is for you. Shining up to 142 lumens, this headlamp features multiple modes to help you see at a distance in the dark. Its strobe mode will alert rescue teams of your presence when you are in a life-or-death situation. It's bright, waterproof, and an essential item for your bug-out bag.

Specifications
- Weight: 3.4 ounces
- Waterproof to 1 meter
- 142 lumens (white LED)

NiteIze.com
$34.99





Coast HL27

Having an extremely bright headlamp can be the difference between life and death in dark situations. The Coast HL27 has a light output of 330 lumens that can illuminate targets as far away as 423 feet. Imagine trekking through unfamiliar backcountry with this headlamp—you'll never be unsure of what is in front of you. The HL27 uses the Light Output Control Wheel and fully encased sensor that detects magnetic fields for a light output control that is durable and weatherproof.

Specifications
- Weight: 7 ounces
- 330 lumens
- Beam distance: 129 meters
- Run time: 8 hours, 45 minutes

CoastPortland.com
$74.99



Underwater Kinetics Vizion

Looking for a headlamp for all-weather use? The Vizion is the one for you. Both impact and water resistant, users can rely on it, whether it gets banged around in rocky terrain, frozen in dense snowpack, or slips into the creek in the backcountry. Though ultralight, the Vizion is powerful, reaching up to 197 feet at 65 lumens for 13 hours. It's the optimal choice for use in the most-challenging environments.

Specifications
- Weight: 3.9 ounces
- Waterproof
- Settings: high and low

UwKinetics.com
$49.99

Streamlight Pro Tac HL

Streamlight's Pro Tac headlamp serves as a powerful light source when needed most. On high mode, it can illuminate up to 172 meters at 540 lumens. Its 90-degree tilting head allows the user to adjust its position for precision lighting. Its solid-state power regulation provides maximum light output throughout battery life, lasting up to 36 hours of lighting. Both water and impact resistant, this headlamp will meet your needs in even the toughest conditions.

Specifications
- Weight: 6.6 ounces
- C4 LED technology
- Modes: high, medium, low
- IPX4 water-resistant

Streamlight.com
$59.95





Petzl Tikkina

Petzl's affordable, yet durable, Tikkina headlamp has a wide beam for proximity lighting. Weighing only 3 ounces, this headlamp is practically weightless in your bug-out bag. It offers two lighting modes that either favor burn time or brightness, depending on your needs. It features IP X4 watertightness technology, making it weather resistant. This headlamp is also compact and simple to use: It features a push button for easy lighting mode selection. This headlamp is essential and classic without breaking the bank.

Specifications
- Weight: 3 ounces
- Beam pattern: wide
- Two lighting modes

Petzl.com
$19.95

Brunton Glacier 115

Having your headlamp run out of battery power in the middle of a survival situation can be dangerous. Luckily, the Brunton Glacier 115 is equipped with a USB port or solar panel allowing its user to recharge the batteries on the go and away from civilization. Shining up to 115 feet at 50 lumens on high beam, the Glacier 115 is powerful enough to light your way, even when battery power is scarce.

Specifications
- USB port
- 3 rechargeable AAA batteries
- Internal SOS flash

Brunton.com
$49.99





Light & Motion Solite 250

Light & Motion's Solite 250 is the ultimate portable lighting system. One of the most innovative products on the market, it is designed to function not only as a headlamp, but also as a flashlight, bike light, helmet light, and freestanding light. Both powerful and versatile, it can shine up to 250 lumens for 2.5 hours on high mode but can last up to 100 hours. It features several operation modes (high, medium, low and SOS) and even includes an extended run time option.

Specifications
- Weight: 5.25 ounces
- USB rechargeable
- Water-resistant

LightandMotion.com
$150

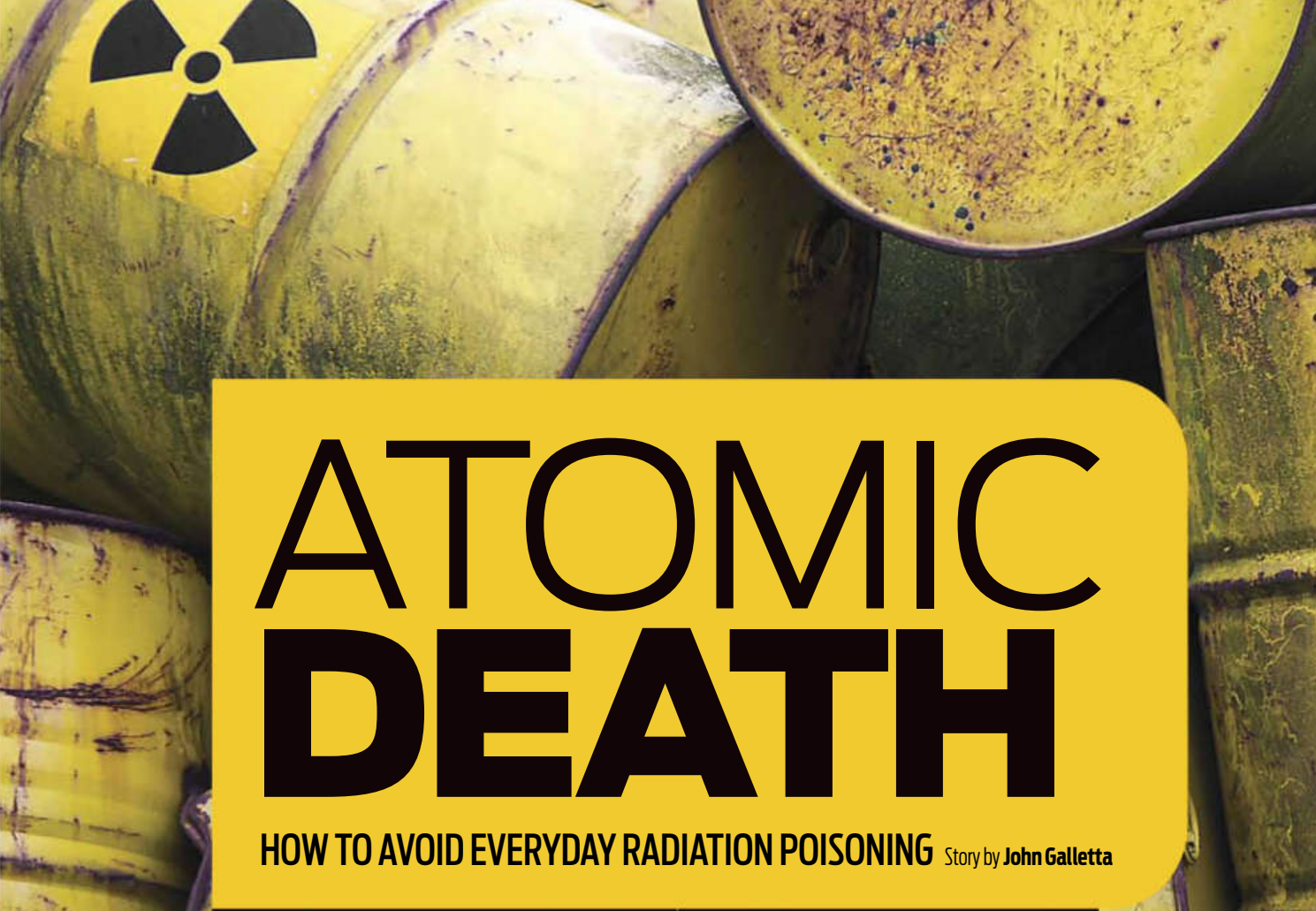
Nitecore HC90

Nitecore's HC90 is one of the toughest and most innovative headlamps on the market. It designed to withstand any abuse it might encounter; it is made of T6061 T6 aircraft aluminum alloy and is waterproof up to 2 meters. In addition, it features a built-in USB charger and three-color output. The HC90 shines up to 900 lumens at 110 meters, so you will never fear any dark, unknown surroundings.

Specifications
- Weight: 4.59 ounces
- Finish: HA III military-grade hard anodizing
- Built-in USB charger

Nitcorelights.com
$172





ATOMIC DEATH

HOW TO AVOID EVERYDAY RADIATION POISONING

Story by **John Galletta**

IT'S ODORLESS, TASTELESS, INVISIBLE, AND, IN THE RIGHT AMOUNTS, IT CAN KILL YOU ALMOST INSTANTLY.

Threats to your survival don't have to be visible to be real. They can surround you, silently chipping away at your body on a molecular level.

Radiation is an all-too-real danger you are constantly bombarded with on a daily basis. It's around us all the time and exists in different forms: naturally occurring, cosmic, terrestrial, and manmade. It's an energy that comes from a source, travels through space, and is capable of penetrating even the hardest compounds.

How can we avoid it, and how can we protect ourselves from it?

WHAT IS RADIATION?

Radiation is energy given off by unstable atoms, but exactly where does it come from?

All things are made of atoms, and those atoms are made up of three components: protons, neutrons, and electrons. The atomic number of an element determines the type of element, and that number is derived from how many protons are in the atom's nucleus. Stable elements such as hydrogen, helium, and nitrogen are non-radioactive, while unstable elements such as plutonium and uranium have an imbalance in their number of protons and electrons. The unstable atom will try to become stable by trying to shed the excess electrons in the form of radiation.

DOSE = DOSE RATE X TIME

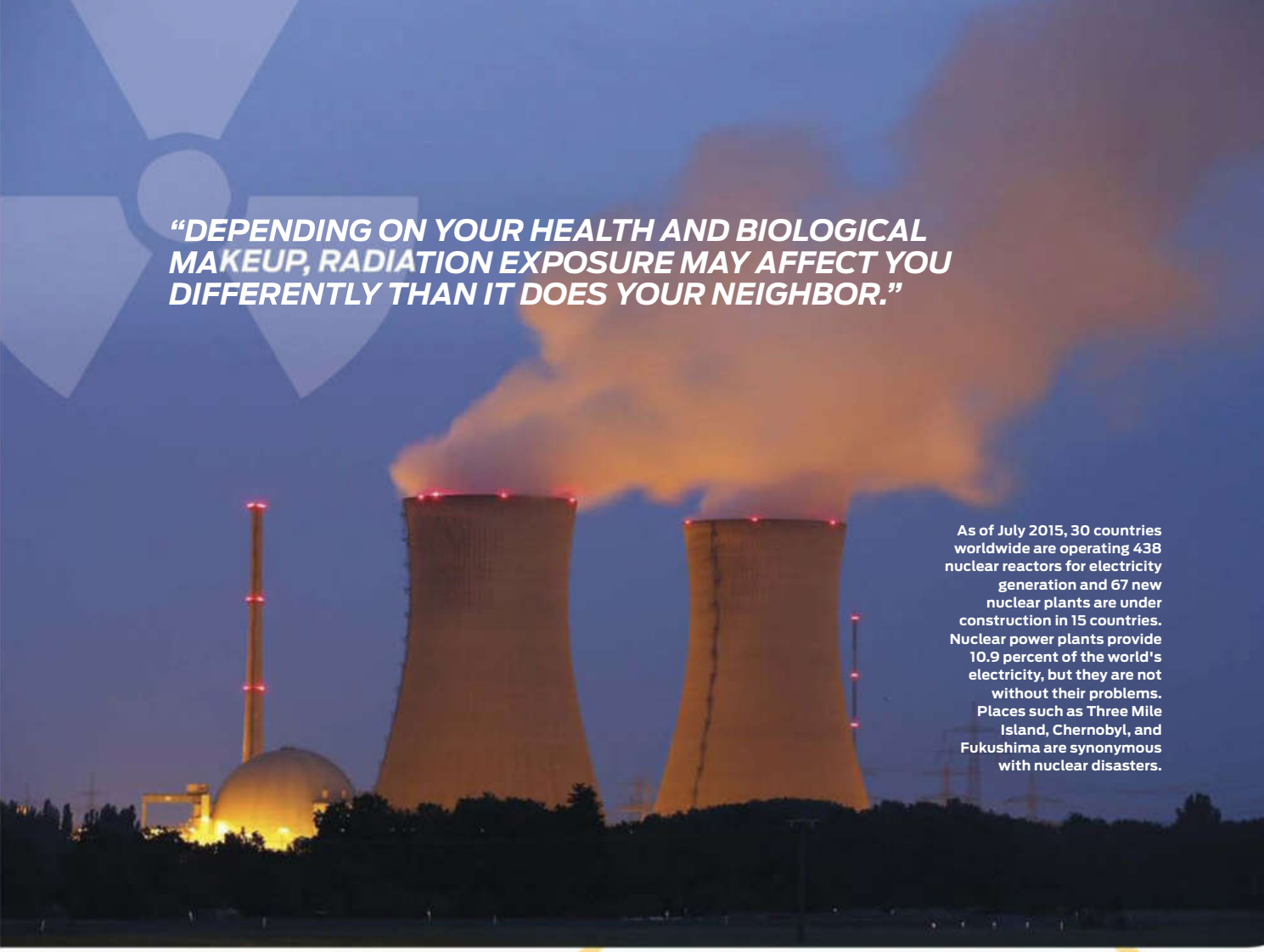
Radiation dose is the radiation energy absorbed by the human body. Dose is like the odometer in your car. It measures the total number of miles traveled. The more miles traveled, the more miles recorded. The same is true with radiation: The greater the amount of time spent around a radioactive source, the more dose you receive. The more energy deposited into the body, the higher the dose.

Dose is measured in units of rem or roentgen (pronounced rĕnt'gən). It is a measure of the ionization produced in the air by X-rays or gamma radiation, and it is used because air ionization can be measured directly.



PHOTO BY PAUL BIRIS / GETTY IMAGES

"DEPENDING ON YOUR HEALTH AND BIOLOGICAL MAKEUP, RADIATION EXPOSURE MAY AFFECT YOU DIFFERENTLY THAN IT DOES YOUR NEIGHBOR."



As of July 2015, 30 countries worldwide are operating 438 nuclear reactors for electricity generation and 67 new nuclear plants are under construction in 15 countries. Nuclear power plants provide 10.9 percent of the world's electricity, but they are not without their problems. Places such as Three Mile Island, Chernobyl, and Fukushima are synonymous with nuclear disasters.

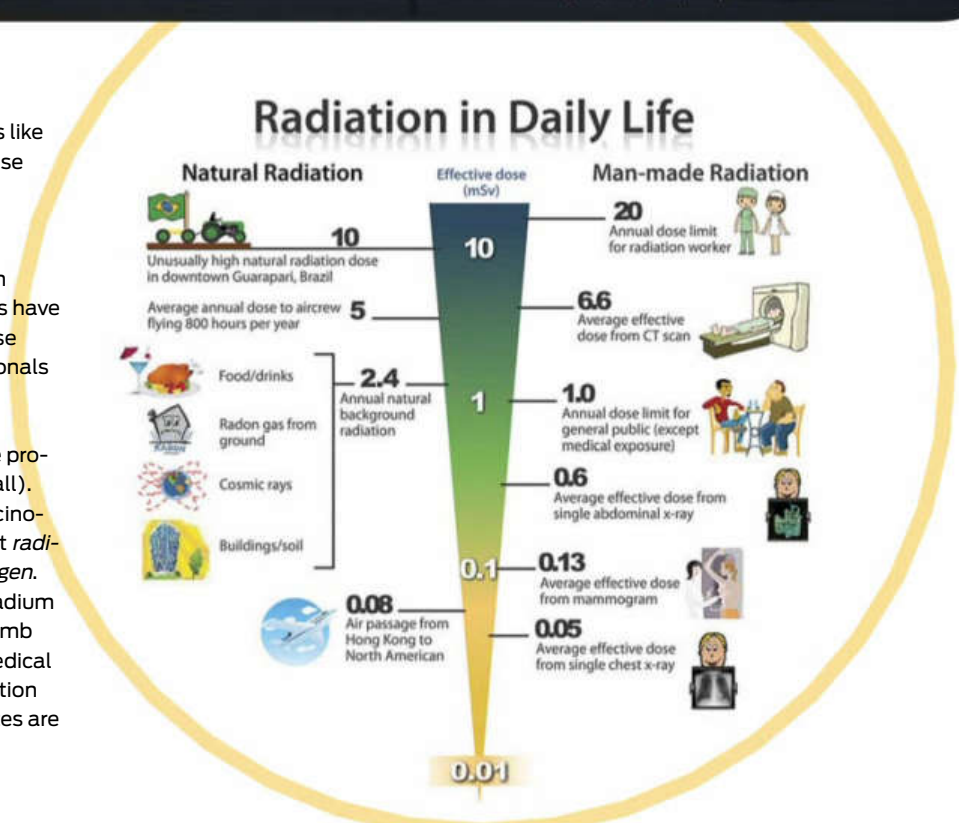
Radiation dose rate is radiation energy received over a period of time. Dose rate is like the speedometer in your car. Radiation dose rate is the dose received over time.

WHAT'S THE RISK?

At low doses, scientists presume radiation causes harm. However, no physical effects have been observed. Not until you receive a dose greater than 50R can healthcare professionals even tell you've been in a radiation area. Although somewhat controversial, this increased risk of cancer is presumed to be proportional to the dose (no matter how small).

The bad news is that radiation is a carcinogen and a mutagen. The good news is that *radiation is a very weak carcinogen and mutagen.*

High-dose effects have been seen in radium dial painters, early radiologists, atomic bomb survivors, populations near Chernobyl, medical treatments, and critical accidents. In addition to radiation sickness, increased cancer rates are also evident from high-level exposures.



HOW DOES RADIATION AFFECT MY BODY?

We are constantly exposed to low levels of radiation from outer space, earth, and from X-ray machines at the doctor's office. But if we're exposed to radiation all the time, and radiation is harmful, why doesn't it kill us?

Exposure in small amounts over time (called a "chronic" dose) allows your body to "fix" damaged cells and recover. Exposure to radiation in larger doses (called an "acute" dose) takes a toll on your cells and leaves little to no time for their recovery. Massive doses of radiation can completely obliterate cells and major organs.

Direct damage occurs when the "kicked out" electron hits and breaks a DNA strand. DNA damage is the most important consequence this displaced electron can have on human tissue and can lead to cell malfunction or death. Our body has about 60 trillion cells. Each cell takes "a hit" about every 10 seconds, resulting in tens of millions of DNA breaks per cell each year.

Our bodies have a highly efficient DNA repair mechanism. Low levels (extremely low, yet measurable levels) of naturally occurring radioactive material are in our environment, the food we eat, and in many consumer products. And even some consumer products, such as smoke detectors and wristwatches, contain small amounts of manmade radioactive material. Exposure to these small amounts still causes damage to your cells but not so much that the cells are unable to replicate.

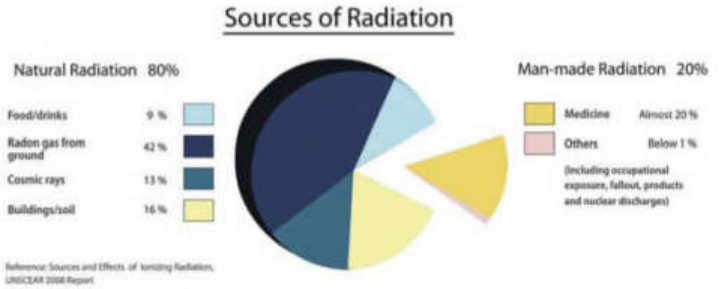
LONG-TERM EFFECTS OF RADIATION

Radiation is assumed to increase one's risk of cancer. The "normal" chance of dying of cancer is about 23 percent. Each rem is assumed to increase that risk by 0.05 percent.

But there's a caveat: Radiation affects everyone differently. Depending on your health and biological makeup, radiation exposure may affect you differently than it does your neighbor. It has been known to affect young and old more than healthy, middle-aged people. For instance, when the bombs were dropped on Hiroshima, there were many survivors. Survivability depended largely on where they were during the blast, as well as their health status. Many people survived with major injuries, and yet, some perished with minor injuries.

HOW TO AVOID RADIATION

In the radiation worker field, time, distance, and shielding are the basic fundamentals of



Types of Radiation

Alpha, beta, X-ray, gamma, and neutron waves are types of radiation that can be harmful. These types of radiation destroy the cells in your body, and the amount of radiation you come in contact with will determine if the cells can replicate and you can recover or if the cells are obliterated—leaving no chance of recovery.

Alpha: Alpha particles ejected from unstable atoms have a range of 1 to 2 inches from the source. Alpha particles pose a biological hazard, yet pose no external hazard. They can be shielded with paper, cloth, and even a dead layer of skin. Alpha particles pose the greatest damage if they are ingested, because they can reach live cells and inevitably cause death. They are also very difficult to detect.

Where can alpha radiation be found? Sources include uranium (nuclear power plant fuel and nuclear weapons), plutonium (nuclear weapons), americium (smoke detectors), thorium (high-temperature metals), and radon gas.

Beta: When beta particles are ejected from unstable atoms, they have a range of up to 30 feet. Thick clothing, a quarter-inch of aluminum, and a quarter-inch of plastic are effective at shielding this type of radiation. Like alpha particles, beta particles are a biological hazard. Beta radiation is particularly hazardous to skin and eyes and becomes an internal hazard if ingested or inhaled. Beta radiation can cause skin burns much like a sunburn.

Where can beta radiation be found? Some sources include used nuclear reactor fuel, nuclear weapon fallout (strontium), and some industrial radioactive sources (cesium, radioactive tritium, such as the type found in glow-in-the-dark "exit" signs, watch dials, night sights on firearms, and radioactive nickel in chemical agent detectors).

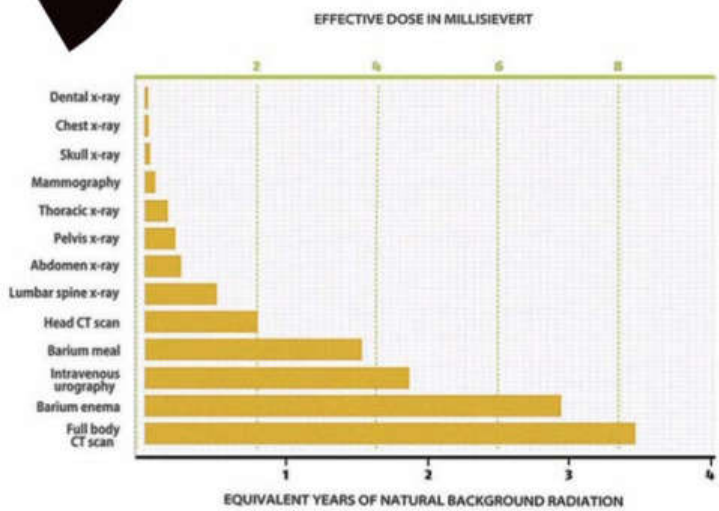
Gamma Radiation and X-rays: Gamma radiation and X-rays can travel hundreds of feet. Shielding that can be used include one inch of lead, three inches of steel, six inches of concrete, or one foot of dirt, depending on the strength of the source. Gamma rays and X-rays easily penetrate body tissues, outside or inside the body, and are considered a whole-body (internal and external) hazard.

Where can gamma radiation and X-rays be found? Sources include uranium, plutonium, radioactive cobalt, and cesium, industrial radiation sources, medical sources and cancer treatment machines. Many beta-emitters also emit gamma radiation. In very large amounts of soil, truck loads of bananas, potassium chloride (a salt substitute), and large quantities of marijuana, radiation exists—but in tiny, harmless amounts.

Neutron Radiation: Neutron radiation isn't what we'd refer to as one of the common types of ionizing radiation to most people, but it's certainly common to people working in a nuclear reactor. Neutron radiation has a range of hundreds of feet and is a whole-body hazard. Neutrons penetrate body tissues and cause damage.

Shielding from neutron radiation needs to be 10 inches of plastic, one foot of concrete, three feet of dirt, or three feet of water.





How Much Is Too Much?

*DOSE (R or REM**)	EFFECTS
25-50	First sign of physical effects (drop in white blood cell count)
100	Threshold for vomiting (within a few hours of exposure)
320-360	About 50% die within 60 days (with minimal supportive care)
480 - 540	About 50% die within 60 days (with supportive medical care)
1,000	About 100% die within 30 days

*CHART SOURCES: UNITED STATES DEPARTMENT OF HEATH
**FOR COMMON EXTERNAL EXPOSURES, 1 RAD - 1REM=1,000 MREM

"avoiding" exposure to potentially harmful radiation. The idea is to minimize the time spent around the source, create distance between you and the source, and put something (water, plastic, aluminum, steel, lead, or concrete) between you and the source so you're not getting maximum exposure.

Another good example of this time, distance, and shielding fundamental is how it works in regard to you and the sun—a potentially hazardous source of energy (in excess amounts). If you're at the beach on a bright summer day, you might be wearing an oversized hat and dark sunglasses to protect your face and eyes from the bright, hot sun. Hopefully, you didn't skip the step where you squeeze white, gooey paste from a tube and rub it all over your body (we'll refer to this as "shielding"). The sun's warmth feels good on your body, especially after a long winter indoors. But it only feels good for a short amount of time before becoming unbearable.

After being in the sun long enough for you to feel uncomfortable or for your skin to become red and painful to the touch, you decide to duck into a local pub and grab a seat farthest away from windows or doors to "cool off" (we'll call this "distance"). If you've managed to get a little sunburn, cells closest to the surface of your skin have become damaged. As soon as you escape the sun, those cells start to replicate, and the healing process begins. If you remain in the sun for an extended period of time without any shielding, your body may become so badly burned that you die (OK, maybe you won't die, but you might get seriously fried) from the "exposure" to the sun's harmful rays. Keep in mind that in this scenario, you can see and feel this potentially harmful source. But you can't see, smell, touch, feel, or taste radiation.

So, how can we avoid something if we have no idea where it's coming from? The only way to know if you're around potentially harmful radiation is to have a radiation detection device such as a personal radiation detector (PRD). These small, handheld devices will notify you of the presence of small amounts of radiation, and, with the proper settings, will sound an alarm in the presence of potentially hazardous amounts of radiation.

EXAMPLES OF RADIOACTIVE ISOTOPES, THEIR HALF-LIVES AND APPLICATIONS

*ISOTOPE	HALF-LIFE	APPLICATIONS
Uranium	billions of years	Natural uranium comprises several different isotopes. When enriched in the isotope of U-235, it is used to power nuclear reactors or nuclear weapons.
Carbon-14	5,730 years	Found in nature from cosmic interactions, used to "carbon date" items and as radiolabel for tumor detection.
Cesium-137	30.2 years	Blood irradiators, tumor treatment through external exposure. Also used for industrial radiography.
Hydrogen-3	12.3 years	Labeling biological tracers.
Iridium-192	74 days	Implants or "seeds" for treatment of cancer. Also used for industrial radiography.
Molybdenum-99	66 hours	Parent for Tc-99m generator.
Technicium-99m	6 hours	Brain, heart, liver (gastroenterology), lungs, bones, thyroid, and kidney imaging, regional cerebral blood flow, etc.

*CHART SOURCES: UNITED STATES DEPARTMENT OF HEATH



PHOTO BY ROBYN BECK / GETTY IMAGES

"RADIATION DAMAGES OUR CELLS' DNA, BUT FORTUNATELY, OUR BODY HAS VERY EFFICIENT REPAIR MECHANISMS."

There are many types of radiation detectors. Some are able to detect alpha, beta, and gamma radiation, while most are only able to detect gamma. Most only detect the presence of radiation, while some are able to not only detect radiation but also identify the radioactive isotope you've just detected. Prices range from a couple of hundred dollars for a Ludlum 14C (14 Charlie) to several thousand dollars for a Thermo-Fischer RiiD (Radioactive Isotope IDentifinder).

HOW CAN YOU PROTECT YOURSELF?

Get trained. Know first aid and what to do before a radiological event affects your workplace (people and facilities). Have an emergency kit and plan. Teach your friends, family, and co-workers about radiation and relative risk factors. Don't panic and do something more risky that the radiation you're running from. Keep personal protective equipment (PPE) such as gloves, respirators (surgical masks), and eyewear to prevent contamination and inhalation damage.

Having a few things on hand can aid you in ensuring that you and your family stay safe in a radiation area.

Radiation damages our cells' DNA, but fortunately, our body has very efficient repair mechanisms. Large, acute doses of radiation can cause sickness or even death. The severity of the effects is proportional to the dose. All exposures are presumed to increase the risk of cancer.

Remember: The amount of "increased risk" is proportional to exposure.



SILENT ARSENAL

WHEN AMMUNITION IS SCARCE, THESE 5 WEAPONS CAN BOLSTER YOUR SELF-DEFENSE

Story and Photography by **Duke Montana**

IT IS DIFFICULT TO IMAGINE WHAT TYPE OF EVENT WILL SEND SOCIETY SPIRALING INTO AN ALL-OUT SURVIVAL-OF THE-FITTEST SITUATION, BUT BULLETS ARE ONLY GOING TO LAST SO LONG. THEN, WHAT?

The following options, which are excellent backup options, are much less expensive than pistols, shotguns, or sporting rifles and can be concealed with great ease. Though they are all silent, they are considered short-range options and have substantial limitations to wounding or killing, but they can bolster your self-defense. Remember that they are not your primary weapons; they serve only as a Plan B to your firearms.



PHOTO BY PAUL BRADBURY / GETTY IMAGES



Here are a few popular choices of weapons that don't make much noise and can be bought without background checks. Not many come with owner's manuals, so you have to learn on your own how to use them. (inset) No doubt the coolest looking weapon of them all—throwing stars. However, it can also be a tricky one to learn to use. Once you do learn, it can be very effective.



There are several different types of throwing stars. Some are three- or four-pointed stars, all the way up to a dozen or more. You may find the lesser-starred types easier to learn with. They come in several color schemes; and none of the stars is more aerodynamic or easier to throw than another.

THROWING KNIVES

There are dozens of designs of throwing knives. Don't fall for the "cool" factor; get practical and well-balanced knives instead of those that look like something from a Klingon battle collection. The nifty thing about a throwing knife is that it is balanced, but some are heavy on the blade end, while others can be heavy on the handle end.

However, the most troubling thing about a throwing knife is having the ability (talent) to throw one. Similar to the throwing stars, start close to a very large piece of cardboard, about three to five feet. The most common mistake: Some people think the knife is supposed to continue rotating during flight. That is not the case—it should fly straight like a dart. The heavier end should fly out of your hand first. So, if you start with a blade-heavy knife, hold the handle. If the handle is heavy, hold the blade part in your hand. There are techniques to follow for throwing at medium- to long-distance targets.

Grip the knife with your index, middle, and ring finger in the center of the handle (assuming the knife is blade-heavy) on one side and with your thumb in the center on the other. Turn at a 45-degree angle to your target with your non-dominant shoulder toward the target. Throw it overhand very similar to how you would a ball. Keep the knife horizontal to the target and follow through with your hand.

The less you bend your arm in the swing, the longer the knife will remain stable in flight.

THROWING STARS

They might look cool, like a ninja, but try using one. It's not easy. You probably can't even hit the broad side of a barn with it on your first try. Out of all the examples here, a throwing star takes the most patience to learn how to use. The obvious worst part about them is figuring out how to hold and throw them without slicing off your fingers in the process.

There are many methods to throwing them: over- and underhand, as well as like a Frisbee. Do whatever feels the most natural. Started at 10 feet, throw them into heavy-duty cardboard, and slowly work your way back until you feel you can't hit the target with any effective speed. Hold the star by one blade between your thumb and index finger. You might find that by using a combination of forward toss and flick of the wrist, the star will leave your hand and not cut any fingers or skin.

As with anything, the first time you do it, use caution. This includes practicing away from any pets and small children who are in the area.



"THEY MIGHT LOOK COOL, LIKE A NINJA, BUT TRY USING ONE. IT'S NOT EASY."





AXES AND HATCHETS

There are axes and hatchets designed to be used as throwing weapons, but not all of them can be treated this way. Imagine, however, how it could be used as an effective close-range weapon against an attacker, human or otherwise. This weapon, in properly practiced hands, increases your chances against anything from a mountain lion to a wolf. If you're able to lower yourself quickly enough, you could deliver a slaying cut to the belly of the animal. Without having done this, it's not sure if the animal would retreat or step up its attack. But if it were a deep slice, it's easy to assume you would have the upper hand.

(left to right) **This design is one of the most common for a throwing knife. They are balanced and lightweight, and if you ding them up in practice, you're not out a lot of money. They come in a few sizes, from 4 to 9 inches long, and most often in sets of three. Some do not feature the holes in the handle or blade areas. This is a perfect example of buying something that looks cool but that can't necessarily be thrown well. You might be able to stick one in a cardboard box with a flick of your wrist, but the feel of it isn't like any of the others. When it comes to throwing a knife, getting a feel for one and how it sits in your hand can go a long way. This axe isn't one for throwing, but it could increase your odds against an attacker who might have the home field advantage. An axe can come in many designs, but it's better to buy practical instead of fantasyland. Make sure its handle fits your grip properly, and don't get one so heavy that you can't be quick in swinging it.**

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(from top) **The dart from a .50-calibre big-bore blowgun packs a nice punch. This big-bore kit came with a starter set of darts. They are long and can be somewhat difficult to attach to a backpack. The .40 caliber blowgun has a very wide range of available tube lengths and darts. Tube lengths can be short enough to fit in a typical backpack or so long that they could resemble a walking stick. Keep in mind that the longer the blowgun, the more difficult it will be to hold steady for a long period of time. It's easy to poke fun at the idea of using a slingshot as a defensive weapon or for hunting. But they have a place in history. A slingshot is inexpensive, easy to learn how to use, and is a good option to be used as a stash weapon.**

Something to consider if you like the idea of having an axe on your defensive weapons list is the size of the handle in reference to your hand. The grip needs to feel good and solid. Anyone with big hands is going to need a larger-diameter grip. An axe used in a defensive manner isn't one of those weapons that should be shared within a group of people; each one should individually fit its owner.

It's important to try and keep the weight to a minimum, as well. Some like to think of an axe as an extension of their fist. But instead of using it to punch, you swipe at the target. It could be useful to find a way to strap an axe to your leg so it won't get in your way while trying to climb a fence or squeeze through a tight entrance. There are some axe sheaths that can be mounted on the back of a vest or to the webbing of a pack—as long as you can reach it quickly and with very little noise.

BLOWGUN

To be honest, this isn't a product you might have ever considered being effective. That is, until you try it. There are two choices of "calibers" within the blowgun world: .40 or .50, with the .50 often referred to as a "big bore."

The driving force behind these weapons is your lung capacity—not just in volume, but also in pressure. It requires a hard, fast "punch" of air to send a heavy dart any distance with accuracy and enough force to do any damage. With enough practice, you should be able to, with just your lungs, sink a .50 "pro hunter" dart into a healthy tree over a half-inch deep at 30 feet. Now, understand that might be in perfect conditions, without any crosswind. You should still be able to stick the dart at 50 feet, but it will have much more drop and won't penetrate as deeply.

A smaller blowgun still has a wide range of darts to choose from and can be just as deadly with a skilled operator. In strong winds, there is much more drift with the smaller calibers (just as with small-caliber rifles). One nice thing about the .40-caliber is that it comes in many more lengths—at least four—from 16 to 48 inches.

Regardless of which caliber dart you use, there are important points to remember when using a blowgun: The big ones are a bit heavier and much longer. As you aim and hold them up for a while, you will feel the weight. Keeping it steady can be tricky, especially if it's windy or if space is tight.

SLINGSHOT

Most people assume using a slingshot is incredibly easy. However, I've seen more than one person get frustrated because they couldn't hit a trash-can the first time at 30 feet. The left-to-right aiming is very simple, but how a person pulls back a slingshot can determine the elevation. It takes a

little practice, but generally, it is easy to figure out after four to five pulls. You can buy a few sizes of plastic or steel balls. If you can afford it, try them all and find one you like the best. Then buy what you can afford and stash it.

The best thing about a slingshot is that even a nice one is inexpensive. A slingshot will have a little more range than a blowgun and a bit more speed, too. However, the stopping power is somewhat in question. A dart will easily go into a soft object. A large, round ball bearing will need some serious force to penetrate a rabbit or similar-sized animal. That being said, you can imagine how it limits the effective distance for a kill shot to a small animal.

PLAN B

Though there are many reasons to carry one of these weapons, the best reason is that when a short-term catastrophe turns into a long-term survival situation, ammunition and traditional weapons might be hard to find. On the other hand, the weapons discussed here are all retrievable, so they can be used again and again.

SILENT WEAPONS PROS & CONS

THROWING STAR

PROS Inexpensive, light weight, compact, reusable and can be very deadly

CONS Somewhat difficult to (hold) throw, hard to find (buy), short range

THROWING KNIVES

PROS Typically come in sets of three, very deadly, inexpensive, and lightweight

CONS Various sizes—each throws a little differently, may be tough to find a set that is balanced to your abilities, hard to find (buy), finding a way to carry several on your person without them getting stuck on other gear. It takes lots of practice to get really good.

AXE

PROS Multi-use item—defense or as a tool, can extend your reach swing in combat, and, if, kept sharp, can cut big material with ease, has an intimidating factor toward enemies, plenty of styles to choose from. A good axe will last a long time.

CONS Can be somewhat heavy and bulky, based on design, and a bit expensive

BLOW GUN

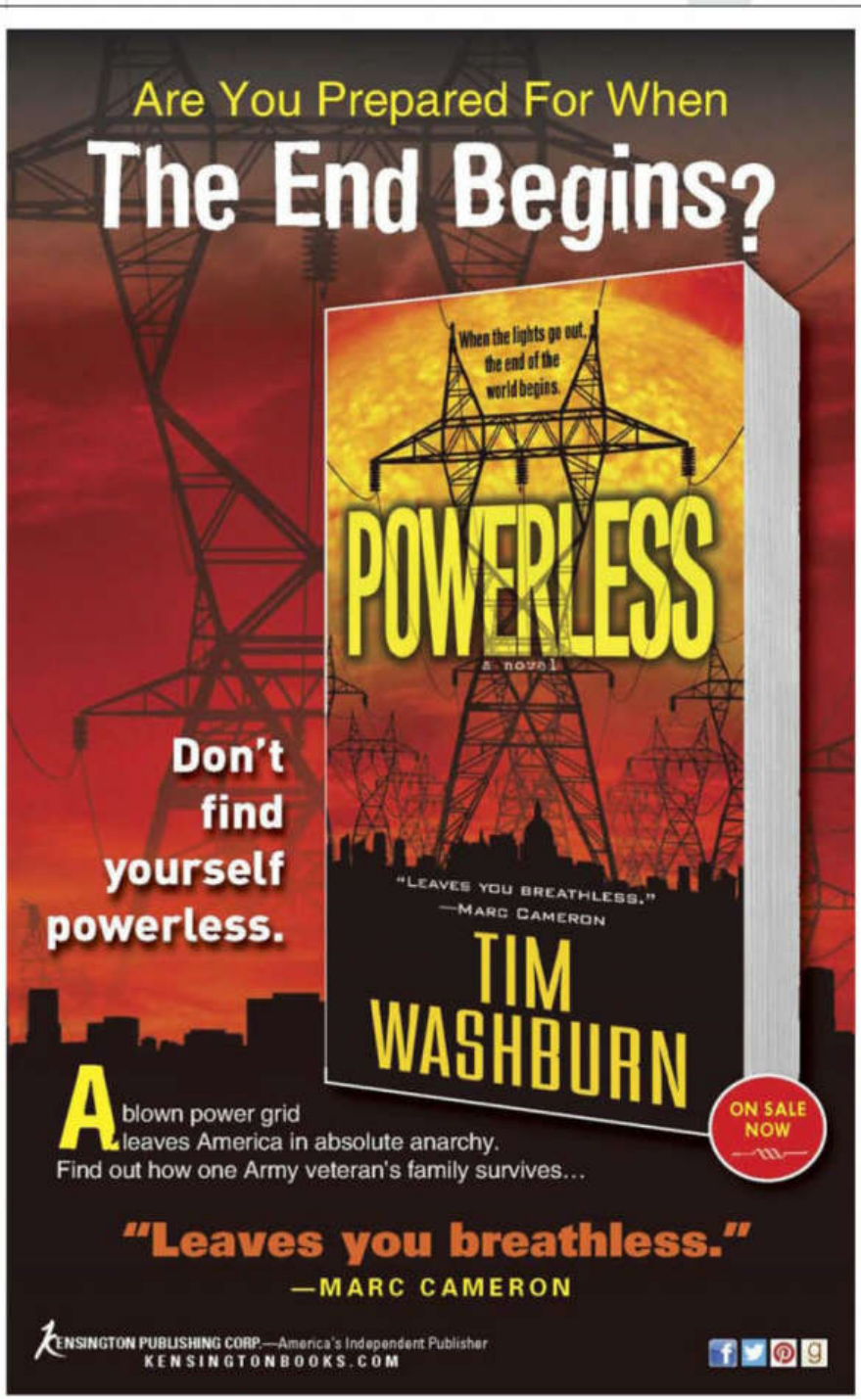
PROS Capable of good accuracy in calm conditions, ease of use, choice of style of darts

CONS Big ones can be hard to strap to your person and a bit pricey, compared to smaller ones, affected more by wind, could break or bend under stress or impact

SLINGSHOT

PROS Inexpensive, compact, ease of use, readily available to buy, reasonably accurate with practice

CONS Not lethal to big game, ammo can rattle around in a pocket, limited effective range, can be damaged somewhat easily



Silent Weapons Gear Guide

Perfect Point P-869-3 Throwing Knives

Made from 440 stainless steel, this set of three beginner's throwing knives comes with a nylon sheath (that holds them all). Each blade is full tang and wrapped in a length of nylon cord. The 4-inch blades are only slightly sharpened. They come in a variety of colors.

Specifications

- Overall length: 9 inches
- Blade length: 4 inches
- Weight (all three): 6.4 ounces
- Blade material: 440 stainless steel
- Sheath material: nylon
- Handle material: nylon cord

eliteprozone.com
$13.99

Wuu Jau Throwing Stars

The four-piece set of throwing stars comprises knives that are all 2.5 inches in diameter and made of anodized black stainless steel. They possess very sharp points and come with a nylon carrying pouch. Cannot be shipped to CA, MA, NY, IN, IL, KS, DE, or VA.

Specifications

- Diameter: 2.5 inches
- Blade material: stainless steel
- Sheath material: nylon

Amazon.com
$10.46

Blades USA RC Throwing Knives

With a spider printing on the side of each knife, these 8-inch, full-tang blades are made from stainless steel. They include a nylon sheath to house all three. The blade is sharpened on both sides, which means it will penetrate no matter where the knife strikes the target. The three slices on the face of the blade are for aerodynamics.

Specifications

- Overall length: 8 inches
- Blade length: 4 inches
- Weight (all three): 12 ounces
- Blade material: stainless steel

Amazon.com
$12.61

SOG Three-Piece Throwing 'Hawks'

Offered in a set of three, this 'hawk' is 10.75 inches overall and weighs approximately 25 ounces. The blade length is 1.75 inches and is made from 3CR13MOV steel. The handle is glass reinforced with a paracord grip.

Specifications

- Overall length: 10.75 inches
- Blade length: 1.75 inches
- Weight: 25.40 ounces
- Blade hardness: 50-56 RC
- Blade material: 3CR13MOV steel
- Sheath material: nylon

sogknives.com
$64.00



Ninja Tactical Throwing Spikes

Each of the three spikes is 6.25 inches in length and made from black stainless steel. All three are wrapped in a nonslip rubber handle to make throwing them easier. They come in a nylon sheath with a wrist wrap.

Specifications

- Overall length: 6.25 inches
- Black stainless steel
- Non-slip, rubber-wrapped handle
- Includes nylon sheath with arm strap

acemartialartssupply.com
$14.47

Amazon Commando Blowgun

This .50-caliber blowgun kit comes with a variety of darts (44 total: 16 target, 8 spike tip, 10 spear, and 10 broadhead). It is made of heavy-duty aluminum and comes with a foam grip for comfort and a sling to carry it on your shoulder. The darts are stored in six quivers that attach to the blowgun. This item is available in 36-, 48-, or 60-inch sizes (the 48- and 60-inch models break down to two pieces).

Specifications

- 44 darts
- 16 target darts
- 8 spike-tip darts
- 10 spear darts
- 10 broadhead darts
- Carry sling and foam grip
- 6 dart quivers

avengerblowguns.com
$22.00 (36-inch model)

Maxim Flipkung Survival Slingshot

The Maxim Flipkung is composed of ¼-inch anodized 6061 T6 aircraft aluminum, which makes it tough, yet lightweight, and compact enough to store just about anywhere. It is wrapped generously in more than 9 feet of 550 paracord. The forks allow for fixed tubes, looped tubes, flatbands, and even chain-linked, basic rubber bands, if the need arises.

Specifications

- Fork tip width: 3 7/8 inches
- Fork gap width: 1 7/8 inches
- Overall height: 5 5/8 inches
- Overall width: 3 5/8 inches
- Thickness: ¼ inch

Simple-Shot.com
$55.00

Avenger Ninja 18-inch Blowgun

The Ninja blowgun line is an easy-to-use blowgun made from high-quality aluminum. It includes 12 target darts and 8 stun darts, dart quivers with dart protective tip-guard, safety mouthpiece, muzzle guard installed on the blowgun, as well as two foam grips. It offers the two most-popular dart types: target and stun dart. Comes in black, blue, purple, green, or red.

Specifications

- Overall length: 18 inches
- Lifetime warranty
- (12) 4-inch target darts
- 8 stun darts
- 16-point quiver
- 8-point quiver
- 1 dart guard
- 4-inch foam fore grip
- 2-inch foam rear grip
- Muzzle guard
- Safety mouthpiece

avengerblowguns.com
$11.50



urban.11.15

Dinner in the City

17 COMMON URBAN EDIBLE PLANTS FOUND IN YOUR NEIGHBORHOOD

Story and Photography by **Christopher Nyerges**

What if you *had* to live off the land in the aftermath of an urban disaster? Could you live without a grocery store? Would there be enough food for you and your family if you were confined to your neighborhood or displaced into a strange environment?

Food is actually all around you. Whatever the situation, these plants are ubiquitous in virtually all urban areas of North America and can provide a source of food during a catastrophe.



"DANDELION IS OFTEN CALLED 'POOR MAN'S GINSENG,' BECAUSE A POWERHOUSE OF VITAMINS AND MINERALS IS AVAILABLE JUST BY EATING IT."

PHOTO BY JOEL SAGET / GETTY IMAGES

11.15

1. Oak Trees *(Quercus spp.)*
Many varieties of oak trees are found throughout the world in urban areas and in the wilderness. They are commonly planted as street trees, so if you live in the inner city, it's likely some of the trees are oaks. You know it's an oak because in the autumn, they produce acorns.

Every culture in the past ate acorns, including most Native Americans. There are whole books with acorn recipes, but briefly, you first need to peel the shell and grind the acorns into a flour. Then, you must get the tannic acid out: Place the acorn flour into a filter (for instance, a coffee filter) and pour cold water through it. It's done when the flour is no longer bitter. Mix the acorn flour half and half with other flours to make pancakes or cookies, or use it as a gravy.

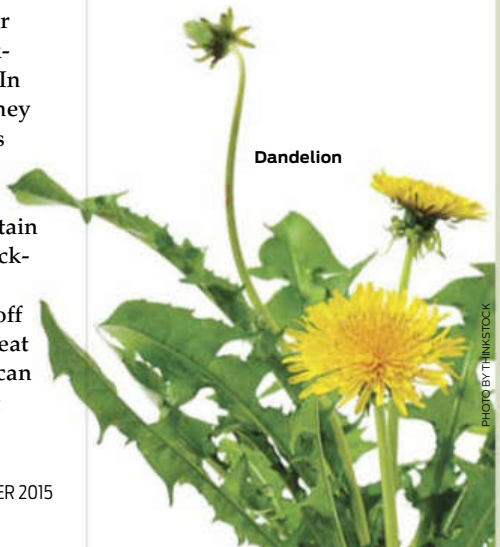
2. Walnuts *(Juglans spp.)*
Wild walnut trees are common throughout the United States and are usually called "black walnuts." They have a soft, fleshy outer cover with meat inside. Wild walnuts require a hammer or rock to break. They are generally half shell and half meat but are well worth the work. The nuts are tasty and oily and great when added to cakes, ice cream, bread or any dish to which you like to add cultivated English walnuts. Watch for these in the autumn, when they fall from the trees.

3. Blackberries *(Rubus spp.)*
Everyone knows blackberries, don't they? These are white-flowered, sprawling, thorny vines that cover vast areas of land, including backyards, vacant lots and roadsides. In areas where blackberries grow, they are often hated by those city folks who are used to getting all their food from the grocery store. As a result, many of these ripen in certain areas and mostly go uneaten. Blackberries are best when fully ripe, nearly black and come off easily off when you pick them. They are great as an immediate nibble, but you can also make jam, jelly and juice out of these sweet fruits and dry them for later on, when they are not in season.

4. Filaree *(Erodium spp.)*
Filaree is a low-growing rosette that seems to love the hard-packed soils of the urban landscape. Yes, it's also found elsewhere, but if you live in the cities, filaree is not far away. It's probably in your backyard right now. The leaves are finely divided. After the little flower is done, it develops into a pointy seed capsule; children sometimes push one seed capsule into another and create toy "scissors"—hence, one common name for this plant: "scissors plant."

Filaree's young leaves are good chopped and added to salads. Older leaves are still a bit sweet, but fibrous, and are better cooked or even juiced. Be sure to wash these well before using, because they grow very close to the ground.

5. Dandelion
(Taraxacum officinale)
Yes, dandelion is everywhere, and it seems to prefer the urban landscape. Gardeners generally despise them, and herbicide ads still feature dandelion as the main culprit that needs killing. Dandelion is often called "poor man's ginseng," because a powerhouse of vitamins and minerals is available just by eating it. It's a rich source of beta-carotene—even higher than carrots. Because its leaves are bitter, you usually need to cook it like spinach or add it to a soup. Even the roots can be cooked until tender and eaten.


Dandelion
PHOTO BY THINKSTOCK


Walnuts


Blackberries








Sow Thistle


Lamb's Quarter


Oak Trees


Filaree


Chickweed

6. Sow Thistle *(Sonchus oleraceus)*
When most folks see a sow thistle, they think it's a tall dandelion, because their flowers are nearly identical. Sow thistle originated in Europe, but it grows everywhere. Typically, it gets a few feet high, with clusters of yellow, dandelion-like flowers. The leaves of sow thistle are tender and palatable in salad (unlike dandelion) and are also great in stews, egg dishes and soups.

7. Lamb's Quarter
(Chenopodium album)
Lamb's quarter is a European native that is now found everywhere in the world in wilderness areas, but it seems to prefer disturbed soils and backyards.

Think of "wild spinach" when you see lamb's quarter. Its leaves can be used in any recipe in which you might use spinach. It is great added to salads, and the leaves can also be chopped and added to soups, stews, omelets, pasta dishes, stir-fries, etc. This plant is also a close relative of the quinoa seed, which is so popular today. When lamb's quarter, an annual plant, matures, it produces voluminous seeds, which can be harvested and used in all the ways you would use quinoa seed. Its seed is good added to soups, pancake batter and various grain dishes.

8. Chickweed *(Stellaria media)*
Chickweed is an annual plant originating in Europe that sprouts up after the rains, so you begin to see it in very early spring; typically, it's completely dried up and gone by late summer. You can enjoy this tender seasonal plant in salads. Try adding dressing, tomatoes or other ingredients. You can cook it in soup or with eggs, but it's really best raw. It has tender stems, with a fine line of white hairs along one side. Leaves are opposite and come to a tip. There are five deeply cleft petals on each little flower. This tasty edible is so common in lawns and urban gardens that there is an herbicide designed solely to kill it off.

9. Chicory *(Cichorium intybus)*
Chicory is another European native that can be found everywhere in the United States. It likes fields and disturbed soils of urban backyards. It can even be seen growing thickly in the little bit of soil used in the center soil strip of highways. The plant grows a few feet tall, with leaves very similar to its relative, the sow thistle. However, chicory is much more noticeable because of its beautiful, sky-blue flowers. Look closely at the tip of a single petal, and you'll see five "teeth." Tear a bit off a leaf, and you'll see some white sap oozing out.


Chicory

Chicory leaves are okay in salads but are a bit bitter. They are better when cooked and used like spinach in soups, stews and mixed vegetable dishes. The root is perhaps more popular than the leaves, having been used as a coffee alternative for generations. To do this, wash and dry the root, grind it, roast it and percolate it like coffee. The washed root can also be boiled and eaten like a parsnip (although it's a little tough if it's an old root).

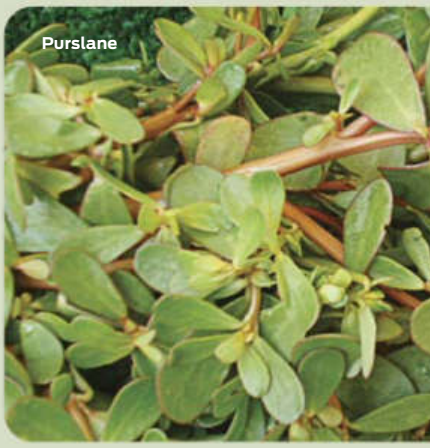
10. Mallow *(Malva neglecta)*
Mallow is a European native found all over the United States. It is recognized by its round leaves with fine teeth on the edges; in fact, most people think it's an ornamental geranium. It can be found in alleys, parkways, empty lots and along freeways, seeming to like disturbed soils. The leaves are mild and can be added to salads or any cooked dish, such as soup or stews. Mallow's little fruits can also be picked and eaten fresh, or they can be picked when mature and cooked to create a sort of "poor man's rice."

Common mallow is related to another European plant, the marsh mallow. Marsh mallow roots used to be boiled to create an egg white substance, which is whipped to create an old-fashioned cough remedy. (Modern marshmallows have no marsh mallow extract and are just another junk food.) You can boil the roots of common mallow to make


Mallow


Oxalis


PHOTO BY WIKIPEDIA
Amaranth


Purslane


Mustard


Violet


PHOTO BY WIKIPEDIA
Stinging Nettle


Wild Lettuce



your own cough remedy, although it probably won't froth up like the European marsh mallow plant.

11. Amaranth *(Amaranthus spp.)*
There are many species of amaranth, and all are edible. Perhaps the most common in urban areas is *Amaranthus retroflexus*, a weak-stemmed amaranth with a red root that is often referred to as "red root." Although they are not U.S. natives, they are found today throughout pockets of soil in the cities and everywhere else. Some amaranths are low-growing, sprawling plants, while some are tall and erect with big, red plumes of seeds. The leaves of all amaranth species have long been used in cooked green dishes and in various Mexican dishes such as tamales. The seeds are a high-protein addition to soups and bread batter.

12. Mustard *(Brassica spp.)*
There are several common mustard plants found widely throughout the United States in fields, urban lots and little patches of soil. They are easily recognized by their four-petaled (usually) yellow flowers and their distinctive, pinnately divided leaves. The leaves are commonly used as cooked greens, although they are good in salads, as well. These spicy leaves can be collected, dried and powdered and then used as a seasoning for other foods. The flowers are also good as a tasty, spicy garnish for urban soups and salads.

13. Stinging Nettle *(Urtica dioica)*
This plant seems to prefer wet areas, but it does just as well in backyard urban gardens and little patches of soil downtown. It's from Europe but seems to be just about everywhere in North America. Yes, there's that word, "stinging," in its name, and if you brush up against it, lots of tiny hairs will release their formic acid onto your skin, causing a stinging sensation that might last an hour or so. As a result, stinging nettle doesn't go into salad. The tender, young tops of nettle can be cooked into soups and stews, eliminating the sting and resulting in a delicious and very nutritious broth. It also goes great with many dishes.

14. Oxalis *(Oxalis spp.)*
We could call this plant a marginal food, but it really is everywhere. Few gardeners care for it, and some buy poisons to kill it. It's often called a clover (which it isn't) or a shamrock. The leaves look like three hearts joined at their apexes. The leaves are sour, like sorrel, and so are added sparingly to salads. Oxalis can also be cooked in most dishes to which you'd add spinach or sorrel.

15. Purslane *(Portulaca oleraceae)*
This plant is widespread in the urban landscape and garden, typically appearing in summer. It grows flat on the ground and has red, round, succulent stems and paddle–shaped leaves. This entirely aboveground plant is good in salads and many cooked dishes and is regarded as the richest plant source of Omega-3 fatty acids. Purslane originated in India but is today found all over the world. Even Henry David Thoreau liked to cook up purslane for his lunch while sojourning at Walden Pond.

16. Violet *(Viola spp.)*
We think of violet as a garden plant (and it is), but there are 500 species of violet worldwide, growing in the wild, in gardens and going feral in people's yards. This is an easy-to-recognize plant because of its heart-shaped leaves. Violets grow year after year from its roots. Its leaves can be added to salads or cooked like spinach. Don't overdo it, however, because it can have a bit of a laxative effect.

17. Wild Lettuce *(Lactuca serriola)*
Wild lettuce grows everywhere, seeming to prefer backyards and alleys. Definitely found in remote areas, it likes the disturbed soil of the urban jungle. It is a true lettuce that is best eaten when it is very young. Pick the leaves and add them to salads. You'll taste the lettuce flavor, but the leaves will be a bit tougher in texture and have a hint of bitterness. As the leaves mature, and especially as they flower, they become more or less inedible and tough, with a row of spines on the bottom rib of the leaf. Remember: When this plant is flowering, it's too old to eat. So, pick it when it is young. It is best when cooked.



11.15

STREET SURVIVORS

BASIC, PROVEN, AND PRACTICAL SURVIVAL SKILLS FROM THE HOMELESS

Story by **Michael Landers** and **Bryan Dumas**

CRAWLING UP THE COLD, SLANTED SLAB OF CEMENT HAS ALREADY GOTTEN OLD, BUT THIS IS NOW HOME. THE CRAWL SPACE JUST BELOW THE UNDERPASS IS AS GOOD AS IT GETS UNTIL YOU GET YOUR FEET BACK ON THE GROUND. YOU PUSH THE FLAP TO YOUR TENT ASIDE, TAKE A QUICK GLIMPSE BACK AT THE DRY RIVERBED SOME 60 FEET AWAY, WONDER HOW YOU GOT HERE, AND THEN CRAWL IN FOR THE NIGHT.

It isn't too far fetched to imagine what life would be like if suddenly—tomorrow or maybe this afternoon—you lost your house, your job, your car, your bank accounts, and almost everything you might have held dear in your life.

What then? Where do you go? What do you do? You're on your own, and you've got to do what you can to survive. And it isn't going to be easy.

Given these possibilities, *American Survival Guide* decided to pound the pavement in Denver and the urban sprawls of the greater Los Angeles area to learn a bit more about some survival methods, both proactive and preventative, that might benefit those to whom such circumstances should befall. There are proven ways to survive within our respective concrete jungles.

PHOTO BY GETTY IMAGES



PHOTO BY GETTY IMAGES

SHELTER

Obviously, the most important of your basic needs will fall under this category. No matter the situation, a safe, warm, dry place to rest and recoup is a given.

You have three aspects to look out for, in terms of setting up a place to sleep: protection from the elements/danger, warmth, and concealment. You also have three options, depending on the situation: You can sleep in a vehicle if you have access to one, you can seek out a homeless shelter, or you can resort to an urban campsite of your own.

Vehicle: Obviously, your car or some type of motor vehicle is ideal cover. Should you have access to a vehicle, parking in a Wal-Mart, 24 Hour Fitness, major hotel chain, or any other type of all-night business parking lot is advised—if you are able to get to these locations. Due to these business hours, you're less likely to have anyone questioning the car or paying you a visit.

" ... THE URBAN CAMPSITE OFFERS A MORE NOMADIC SENSE OF REFUGE, BUT YOUR BIGGEST ENEMIES ARE MOISTURE, COLD AND HOT WEATHER, AND ENVIRONMENTAL PREDATORS ... "

Your car can, of course, provide you with occasional heat if you need it, as well as power for connective devices such as laptops or cell phones, if you have one. There are many A/C adaptors within the $20 to $40 range, and you would be well served to keep one in your vehicle or bug-out bag, along with your phone charger (which you already probably keep on hand). Sunshades are also advised, because these are not only great for daytime protection, they are ideal for nighttime privacy, as well, especially if your vehicle lacks tinted windows.

Homeless Shelters: Shelters are extremely beneficial to those in urban areas, and the homeless communities at large vastly appreciate them. However, staying in one can be trying for a newbie seeking a bed in a city homeless shelter, because this scenario comes with a bundle of other troubles. You have to sign up early to get a spot, and doing so sometimes requires you to be confined to the immediate area for the day.

The night before our Denver visit, there had been 523 men sleeping on mats or in beds in a large warehouse space.

"Most of these guys are on one drug or another," says Greg, 48.

Shelters can often become a dog-eat-dog world in which what's yours can quickly become someone else's. Albert, 40, originally from Los Angeles, explains how he slept at night in the shelters.

"I'd keep my legs on my suitcase and use my backpack as a pillow. Ain't nobody going to try and take anything from me."

An overwhelming consensus is that shelter accommodations would be best if limited to the occasional use for one or two days a week, based around meal giveaways and personal needs, such as showering and seeking alternate clothing.

Shelters can, however, offer assistance programs, substance abuse counseling, and a variety of placement programs for long-term homeless folks looking to get back on their feet. These programs should not be overlooked if applicable to your situation. Many of the people we interviewed felt that being on their own in the street was superior in a psychological sense, because they did not want to become dependent on the shelter or its "usuals" for community.

Urban Campsite: Certainly the most versatile, if not the most difficult, option for shelter, the urban campsite offers a more nomadic sense of refuge, but your biggest enemies are moisture, cold and hot weather, and environmental predators, in that order.

Furthermore, most cities have areas where outdoor sleeping is frowned upon—but not illegal—between 9 a.m. and 6 p.m. While this can ease the burden of napping during the day, it does not mean you won't be harassed or asked to move, and getting nighttime rest will be your biggest challenge.

A camp should be divided into three separate sections: where you sleep, where you eat, and where you take care of bodily functions. Dividing these is important when it comes to insects and scavenger animals, especially concerning leftover food wrappers or containers. Rats, raccoons, stray cats, other feral animals, and insects will likely ruin your site if you have any food remains lying around. Napkins from restaurants can serve as toilet paper if you cannot find or afford to get an adequate supply.



Doug, 52, is a now volunteer at a Colorado Crossroads Center after having lived on the street in a tent for a number of years.



Jose, 59, is married and has been on the streets of Denver. He lives in a tent camp along the Platte River.

Martha, a 46-year-old Los Angeles resident, echoed the overwhelming collective sentiment of the virtue of finding higher ground whenever possible.

"I have a few places I use. Underneath the overpasses, there's a flat area at the top that you can hide in and sleep well. Loading platforms are also really good. Otherwise, I like to be on a hill by trees or bushes. But you gotta be careful by the parks at night, because the cops will get you," she says.

The "higher ground" theory applies to rooftops, as well. A man in Los Angeles' MacArthur Park had been sleeping on top of a mid-city building for a few months—thanks to an accessible fire escape. Rooftops can also lead to abandoned buildings, and these come with legal and dangerous problems of their own, which should be thought through before being considered. Hillsides with plenty of plant cover are ideal for protection from inclement weather, as well as concealment. Being elevated also decreases your chances of sleeping in puddles or accumulated rainwater runoff.

For cover, a section of tarp was used in multiple sites and can easily be taken down, folded, and carried.

"You will want to camp where you feel the most safe," says Jose, 59. "In the summer, you can get into the trees and bushes and get yourself a brown or green tarp, and nobody would see your camp."

If you have access to dollar stores, automotive shops, and garden centers, they are the most likely places that provide a chance of scoring a tarp. Tarps can easily be converted into tents and lean-tos, depending on the environment. In colder weather, they can be used to wrap around your sleeping bag or clothes for insulation. Heavy-duty garbage bags also work and can double as ponchos or storage containers.

Moisture is your biggest enemy—it compromises both warmth and hygiene. Hypothermia can also strike, even in "warm" weather.

Avoid sleeping directly on the ground, because the cold will permeate your body quickly. Building a "bed" was the norm in all the campsites we saw, and old couch cushions, tree branches, boxes, and polystyrene foam nuggets were common materials. Regardless, putting yourself—or even your sleeping bag—directly on the ground were no-nos.

A sleeping bag will be your most prized possession, along with wool blankets, old curtains, and tablecloths, and extra clothing for warmth. These items need to be taken with you at all times, as well, because they are premium survival items and difficult to replace.

Remaining as unseen as possible is absolutely crucial. Your campsite essentials should be portable in the event of the police or another homeless person ransacking it. A clean, or nonvisible, camp is less likely to be disrupted or detected. If you've finally found a spot to regroup, the last thing you want to do is waste energy finding another one, and physical and psychological energy will become huge adversaries. If you are lucky, you might be able to stake a place for a month or so.

"My camp was on private railroad land," 52-year-old Coloradoan Doug said, "so I didn't have to hide it as much. If you are well concealed, you don't have to move yourself daily. Sneak out and sneak in."

In the case of a catastrophic-level event or martial law, all rules obviously go out the window. Currently, urban camping laws can vary from city to city, so there are no absolutes, other than the fact that in most cases, it is the cover that can draw negative attention from both law enforcement and others.

FIRE/HEAT

There are a few ways to create a heat source, depending on your situation or environment. Cans are invaluable in this arena, especially coffee or similarly sized cans, because their size makes them easily concealable, and they can be used for warmth or cooking.

Eric, 30, uses them religiously. "I'll go to a 99 cent store and get petroleum jelly and a lighter. Then, you just gotta poke holes in the can, put nails through 'em, wipe the petroleum on paper or cloth and set it where the nails meet. It will burn for a while. You just gotta keep putting more stuff inside before it burns out."

Wood, newspaper, cloth, and cotton balls make good kindling. If you don't have a lighter, matches can often be found for free at bars or hotels. You can cook food as you would s'mores at a campfire or, in Eric's case, on top of an old cheese grater he found and cleaned that doubled as a perfect grilling rack and fit across his coffee can. A smaller soup or tuna can makes a good candle by using similar kindling methods. Those who have the access and the savvy can also use the flint-and-steel method to start fires.

HYGIENE

Keeping yourself clean is one way to keep attention away from you—attention from people who might prey on you or your things, people who just want to harass you, or the police. It is important to blend in.

The men we spoke with utilize the various city shelters that offer hot showers, but there are other things you can do in a pinch: Swimming

pool showers are great for those near a pool or beach, and hotel lobby bathrooms are good—that is, if you can look somewhat clean going in or if you can sneak in. They have hand soap and hand dryers for your clothes. The towelettes that come with hot wings are great for cleaning your face, under arms, and groin and, because most people throw them away, you can find them everywhere.

Baking soda is also effective as both toothpaste and a deodorant substitute, and rubbing alcohol inside a spray bottle from a dollar store can be used as a quick shower remedy, coupled with an old or worn shirt. Hand sanitizers, toothbrushes, and razors are also cheap at those stores and highly recommended by the individuals we spoke with. Dental health is paramount, because your teeth will decay the quickest, depending on how long you are homeless.

Your hygiene is also directly related to your freedom from inclement weather during business hours: You can walk around malls and department stores more freely if you don't look homeless. Good hygiene is also crucial for seeking food sources.

business. For instance, Eric has a good relationship at one pizza place that gives him leftover food before it reaches the dumpster by setting it outside at a certain time.

If you do dumpster-dive, your success will be related to nearby competition and knowing the best times and places to do it. The day-old racks at supermarkets can also yield cheaper food sources that need timely consumption. Condiments come courtesy of fast-food restaurant packets. Soup kitchens, missions, churches, and shelters also serve food; the trick is knowing when to go.

"You try to keep food that animals can't smell, like canned goods," Jose adds, "but I've slept with rats. It comes with the territory."

If you are unable to keep a concealed camp,

"HOTELS OFTEN HAVE FREE CONTINENTAL BREAKFASTS, AND IF YOU LOOK CLEAN, YOU CAN EAT AND LOAD UP ON GREAT FOOD ... "

CLOTHING AND BAGS

Perhaps the most important thing is keeping your feet as dry as possible. During the times you can get comfortable, take off your shoes and socks, and procure extra socks any time you can.

Having multiple items of clothing helps in many ways. When one gets dirty, you can change, keeping the "dirty stigma" from you. When winter sets in, you can layer the clothes for warmth.

Doug has a different strategy. "I carry a backpack. It has my razor and my toothbrush, but I don't carry extra clothes with me. I might carry one pair of jeans, one T-shirt, one underwear, but everything else is concealed at my camp."

The reason for this, he explains, is to avoid another homeless stigma: Carrying your "house" with you makes you stand out from the crowd of people going to work, lunch, or a baseball game. You want to blend in. Doug's best advice on this is to find a shelter that has storage units and keep your things there if you can; if you can't, it comes back to having a well-concealed camp.

Whatever you do, keep your bag close.

"Your whole world is in your backpack; if you lose your backpack and you need meds and they are in there, you've lost everything," Doug advises.

Remember: Your birth certificate and Social Security card can go for quite a bit of money, so keep them in a wallet or hide them well.

FOOD AND WATER

Again, hygiene plays a huge part in successfully finding food. Hotels often have free continental breakfasts, and if you look clean, you can eat and load up on great food stocks such as dry cereal, peanut butter, granola bars, breads, and bananas. Bagel shops, pizza places, and fast-food restaurants often have food that gets thrown away at the end of

be sure to carry food that is light, portable, and small. As a rule, your food should be simple to cook and something that won't spoil quickly.

Water sources are fairly easy to come by in a city. Just make sure you have at least one water bottle and fill it up every time you find a fountain. Army/Navy surplus stores also have iodine tablets, if you can afford them. A Lifestraw-type of product would be good to have in a bug-out bag; just to be sure you aren't going to get sick from consumption. Some of Denver's homeless head up into the foothills for the summer months and drink water from streams. But use basic camping smarts: Boil it.

MENTAL COURAGE

You have a camp, access to water, a bag to carry your clothes, and food, but the reality of your situation will quickly set in. This is often the toughest aspect of being homeless, in that depression and mental fatigue can lead to substance abuse and apathy.

"Get used to hearing 'No,'" Doug says. There will be plenty to get you down, but you cannot focus on the negative.

Greg points out, "In our situation, we really don't put too much bacon into what will come tomorrow. We are focused on the day-to-day."

While that may sound harsh, Jose says it



PHOTO BY GETTY IMAGES

helps him. "I expect everything to go wrong. It keeps me balanced. People will come at you for different reasons. Roll with what comes."

One way to do this is to maintain a social circle. Learn to get through each day with the help of others.

"Homeless people form tightknit communities. Street people will have each other's backs," Doug says.

And, just as in high school, there are cliques on the streets. The youth will associate with the youth and the older with older people.

Being on the streets at night can be frightening, but Jose adds, "There is safety in numbers, but keep a close-knit group, and even with them, you still have to keep an eye out."

Keep your group small and learn to trust, the men say in agreement. Most importantly, you have to constantly adapt.

Another way, advocated by Eric, is to go it totally alone. "I don't like being around other people, because I can't trust them," he says. "A lot of people are drugged-out, and that is contagious. They're always negative, too. I hate going to shelters or being around them if I don't have to; plus, the older people have worse attitudes. College kids are the coolest people to be around. They're a lot less judgmental and down to help you more than other people."

He feels that being around other people who are homeless is also more depressing and believes that you have to do anything you can to keep your mind off your situation.

Finding books to read is extremely important in this regard, because boredom is tough to ignore and dangerous for your mental health. Bookstores often have "free piles," and buses, train stations, and hotels are good for loose newspapers and discarded magazines.



Michael collects cans to earn money while living on the streets.

STAY STRONG

No matter the cause, if you find yourself on the street, it does not have to be the gloomy horror many people make it out to be. It will not be a bed of roses either, but, as Doug says, "If you use common sense and live for each day, things will get better."

Don't focus on the negative. By following some basic survival skills and keeping your mind balanced, you can survive days—or even weeks or months—on the streets until you can get yourself back on your feet. Denying the possibility and not planning will only make the reality you face on the streets that much harder. ASG

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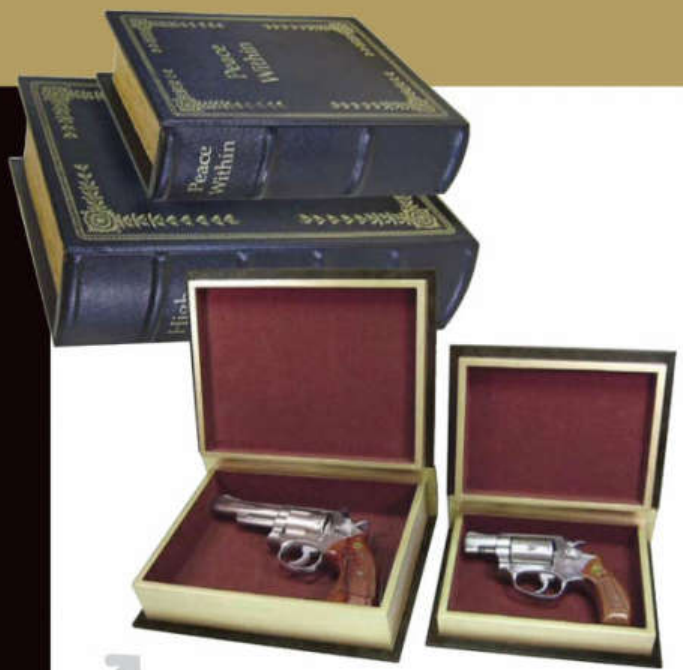
Conceal Your Firearms in Plain Sight

Story by **Nikki Grey**

IF YOU OWN FIREARMS, chances are you store them in some sort of safe. Aside from people who keep their handguns tucked underneath or around their beds (there are plenty of small safes you could use for this purpose), the most secure place for weapons in a home or office seems to be a safe.

Depending on where you live, there are regulations and certifications regarding gun safes. The State of California Department of Justice, for example, regulates standards in that state, including the stipulations that a safe is "listed as an Underwriters Laboratories Residential Security Container, is able to fully contain firearms, and provides for the secure storage of firearms," according to the State of California Department of Justice Office of the Attorney General's website.

Following are just 12 of the many available gun safe options to consider.



Major Surplus & Survival Diversion Books

This two-book set, including one small and one large book, allows for gun concealment right under your nose. The larger book houses most full-sized handguns. Smaller- to medium-sized firearms fit into the smaller diversion book, as well. Each comes with a magnetic closure, along with a cover title.

Specifications

Dimensions
- Large book: 8x10½x2 inches
- Small book: 6¼x8¼x2 inches
- Magnetic closure
- Cover titles: *Higher Power* and *Peace Within*
- Weight: 3.12 pounds

majorsurplus.com
$32.95

Paragon Lock & Safe 7750 Deluxe Wall Safe

The 7750 Deluxe Wall Safe can securely store your valuables while hidden in a closet or behind a picture. This electronic safe can be opened with a code or key. It is made of solid steel and includes tamper-proof hinges and carpet mat padding inside. Added security features include the option to change the code any number of times. Fixing bolts, along with pre-drilled holes inside the safe, ensure that this safe is not going anywhere.

Specifications
- Includes: anchor bolts, pre-drilled holes and fixing bolts
- Runs on AA size (1.5V) batteries
- Made of solid steel
- Door of safe opens to the right
- Dimensions: 22x16¼x4 inches
- Weight: 40 pounds

paragonlockandsafe.com
$399.95

WHAT TO LOOK FOR

» Gun safes range in size, height, and weight and should provide information about how many firearms they can hold at a time. When shopping for a safe, be sure to check if it has a locking mechanism—not all do, so buyers should exercise caution when placing these safes in areas where people other than the owner have access. Locks can function through fingerprint scans, be digital with a combination or manual with a key. Some safes have multiple locking options. Many are made of steel, and some can be hidden in clocks or books. Whether esthetically pleasing or solely functional, these safes will help you keep your firearms, as well as you and your family, safer.





Gunvault Speed-Vault SV500

Keep your handgun ready to use with Gunvault's SV500. This safe has multiple vaulting options, including attaching under and next to a desk, that keep it secure and safe. Constructed of 18-gauge steel, the SpeedVault features a digital keypad, along with a backup override key, audio and LED low-battery warning, protective foam-lined interior and more.

Specifications
- Protective foam liner
- Digital keypad
- Backup key
- Interior courtesy light
- Audio and LED low-battery warning
- Dimensions: 6½x3½x13 inches
- Weight: 7 pounds

gunvault.com
$226.99



Stack-On Wall Safe With Electronic Lock

This safe has a solid-steel, pry-resistant door and can be placed inside a drawer or mounted on a wall. Its electronic lock features a keypad that times out after three incorrect combination attempts. For convenience, a light warns you when it's time to change the batteries. Backup key and removable shelf/divider are provided.

Specifications
- Solid-steel, pry-resistant door
- Pre-drilled holes
- Removable shelf/divider
- Two live-action bolts
- Dimensions: $13^{13}/_{16}$x$3^{3}/_{4}$x$20^{5}/_{8}$ inches
- Weight: 30.875 pounds

stack-on.com
$59.99



Homak Small White Wall Safe

Made of steel, this wall safe featuring a tubular locking system can be easily concealed behind a picture or in a closet. It includes a full-length piano hinge on its door and fits between 16-inch center wall/floor studs.

Specifications
- Tubular locking mechanism
- Made of 1.5mm cold steel
- Piano hinge on door
- Fits between 16-inch studs
- Dimensions: $17^{1}/_{8}$x4x$11^{3}/_{4}$ inches
- Weight: 20 pounds

homak.com
$130.00



Covert Cabinets Gun Storage Shelves

Maximize the space you have by hiding your gun in a wall shelf. Covert Cabinets wall shelves contain a dropdown compartment that can hold one to two handguns. Available in several different colors (including espresso, satin black, caramel, aspen white and more), these shelves come with a magnetic safety lock, magnetic key and customizable foam insert. Customized orders are available upon request, as well.

Specifications
- Dimensions: 21x12x4 inches
- Magnetic safety lock with key
- 20-pound weight limit
- Multiple colors available
- Two stainless steel hinges
- Mounting hardware included
- Customizable foam insert

covertcabinets.com
$239.99



Personal Security Products Mantle Gun Clock

Keep your glock in this mantle clock, and none will be the wiser. This wooden safe has a mahogany stain, making it attractive, as well as functional. The safe's hinged front panel is magnetic. The battery-operated clock can conceal a small- to-large handgun.

Specifications
- Dimensions: 14⅝ x 7⅜ x3¾ inches
- Solid wood with mahogany stain
- Requires AA batteries
- Magnetic front panel
- Clock
- Holds most sized handguns

psproducts.com
$50.95



V-Line Closet Vault

Designed to be able to hide in a closet or behind a door, V-Line's Closet Vault rests between wall studs and protrudes 2 inches to allow additional depth. This vault also features a mechanical push-button lock with a programmable combination. Additionally, two tubular key locks are included. Adding accessories can customize shelves.

Specifications
- Dimensions: 53x13½x5¾ inches
- Fits behind door or inside closet
- Mechanical push-button lock
- Two tubular key-locks
- Weight: 65 pounds

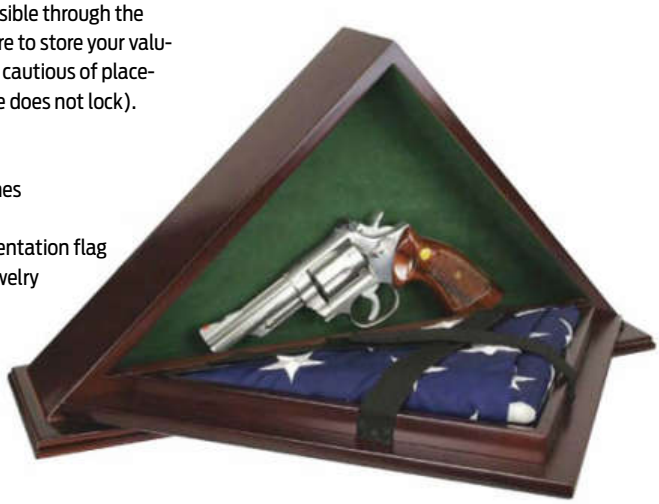
vlineind.com
$586.00

DC Mach Gun Concealment Flag Box

Hide your gun behind a 3x5-foot presentation flag, because both can fit inside this concealment flag box. Featuring a magnetic door, the box is also lined with velvet to ensure that the box contents don't get scratched. The flag is visible through the Plexiglas door, so be sure to store your valuables behind it (and be cautious of placement, because this case does not lock).

Specifications
- Dimensions: 17x12 inches
- Sloping sides
- Holds a 3x5-foot presentation flag
- Can house pistol or jewelry
- Magnetic door
- Weight: 5 pounds

dcmachinc.com
$44.99



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V-Line Hide Away

This hide-away safe offers quick access with a slide-out drawer. A recessed door offers additional pry protection. It differs from many other safes in that there are no keys or batteries; instead, it features a five-button mechanical lock with 1,081 possible combinations.

Specifications
- Dimensions: 12¾x9¾x3½ inches
- Slide-out drawer
- Recessed door for pry protection
- Mechanical lock with 1,081 possible combinations
- No keys or batteries
- Weight: 18 pounds

vlineind.com
$280.00

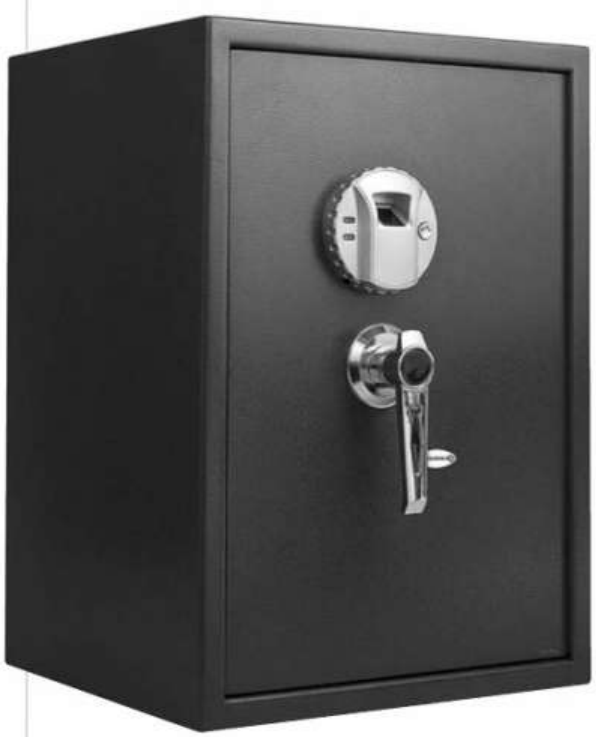
American Furniture Classics 502 Concealment Gun Bench

As many as five long guns can fit inside the locking compartment of this bench. With a fabric-lined interior, it features inside upper and lower storage, a polyurethane covering and hardwood feet. It includes removable butt and barrel rests, as well.

Specifications
- Dimensions: 51x17x20 inches
- Inside upper and lower storage
- Polyurethane covering
- Removable butt and barrel rests
- Hardwood feet
- Weight: 66 pounds

americanfurnitureclassics.com
$219.99





Barska Large Biometric Wall Safe

Barska's fingerprint-scanning safe enables secure access to multiple users—storing up to 120 fingerprints—through its biometric memory system. Made of sheet steel, the safe includes an inside locked compartment with LED lighting and a fold-down tray. A removable shelf, interior floor mats and two interior and two exterior keys are also included.

Specifications
- Dimensions: 31½x15½x4 inches
- Made of sheet steel
- Biometric fingerprint scanner
- Interior locking compartment
- Fold-down tray
- Internal floor mats
- Two exterior and interior keys
- Weight: 48 pounds

barska.com
$428.65

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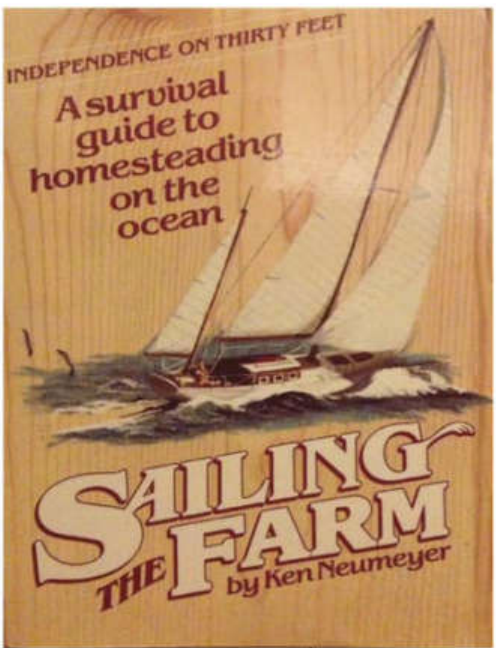
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Review by **J.D.Hughes**

Sailing the Farm

By Ken Neumeyer



What young man hasn't seen a pirate movie and dreamed of the freedom and independence implicit in a life lived on the open sea? Like Robert Redford in the movie, *All is Lost*, how many men of a certain age have yearned to be able to abandon all the responsibilities of modern life and travel to a place where the only thing they have to concern themselves with is the ultimate necessities of day-to-day survival?

In 1981, Ken Neumeyer was 28 and wrote *Sailing the Farm*. At that time, he had already logged thousands of miles and years of solo sailing. He had owned and lived aboard a 30-foot sailer at 18, sailing the Caribbean, honing his skills and learning what was needed and what he could live without. He experimented with different and new technologies with the ultimate goal of being completely self-sufficient. He did this before the term, "off the grid," was in common usage.

In the introduction to *Sailing the Farm*, Neumeyer talks of the small sloop his father bought when he was 15 and how the weekend cruises with friends and family forever altered his outlook on life and led to his dream. He owned three boats over the next decade, culminating in the steel-hulled *La Lionesse*, which foundered on a jagged reef early one foggy morning. For years after that, his next boat was just a plan bouncing around in his head, a dream of the ultimate floating homestead. That led to the writing of this book. Unfortunately, Neumeyer was never able to fulfill his dream, because shortly after the publication of *Sailing the Farm*, he was involved in a tragic accident when a boat fell from its trailer and landed atop his car. His injuries required extensive rehabilitation, and he was never able to sail solo again. He died in 2013.

But I don't sail, you say? If you have any interest in a self-sufficient, off-the-grid lifestyle, I highly recommend adding this book to your survival library. The book is really a homesteading guide. The first three chapters deal with the specifics of living in a tiny, ocean-going travel trailer. With details on building a desalinating water purifier, solar food dehydrators and other shipboard living necessities, these chapters are the DIY portion of the book. Chapter two, for example, covers shipboard finances and is really just a primer on how to become an ocean-going itinerate tinker/trader. Chapters four through eight are more specifically about food and how to grow and store it in the limited space available shipboard. Chapter nine includes recipes to make the sometimes bland ingredients that are necessitated by limited storage space and high calorie content palatable.

Though technology has come a long way in the 34 years since Neumeyer wrote the book, the principles of survival on an ocean-going homestead remain the same. If you can't afford to equip your floating retreat with all the latest and greatest gear, you could do far worse than following the lead of a young man who planned to live a nomadic seafarer's life before that gear had been developed.

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Death by AC/DC



»Before alternating current (AC) was the norm, Thomas Edison tried his damnedest to show how dangerous it was, while, at the same time, promoting his method of electricity delivery: direct current (DC). Edison predicted that George Westinghouse's AC generators were "just as certain as death. [He] will kill a customer within six months after he puts in a system of any size."

A letter delivered from dentist Alfred P. Southwick in November 1887 gave Edison an idea. Southwick suggested, after seeing a man accidentally touch an electric generator, that electricity could be used for executions.

Though Edison was staunchly against capital punishment, he was also staunchly against Westinghouse gaining market shares, so he decided to show just how lethal alternating current was by killing scores of dogs in his lab—as well as several calves and a horse—before New York state officials. They liked the idea, and Edwin Davis built the first electric chair (Edison paid to make sure AC was used). On August 6, 1890, convicted murderer William Kemmler was subjected to a lethal dose of electricity and became the first criminal to be killed via electrocution.

Despite Edison's efforts (and money), AC current soon became the industry standard, and 4,443 people (26 were women) followed in Kemmler's "dead man walking" footsteps.

Death by Electrocution

There is much controversy surrounding the death penalty, and electrocution specifically, but the system is designed to deliver up to 2,450 volts at 7.5 amps for around 20 seconds and then a lesser voltage of 240 volts at 1.5 amps for as much as 60 seconds. The initial voltage is supposed to stop the heart and render the prisoner unconscious, while the second voltage destroys internal organs. If it doesn't, the process is repeated.

Most times, electrocution happens at much lower voltage levels; most people are exposed to voltages of 110 to 220. Copper thieves, electricians, and construction workers can be subjected to enough voltage to serious injury them, but their injuries are more pronounced, and death usually takes a lot longer.

Electrocution Stats

6
percent of work-related deaths due to electrocutions

61
percent of electrocutions due to high-voltage power lines

2
amperage that can cause cardiac arrest

15/20
common fuses (measured in amps)

350
annual fatal electric shocks each year in the United States

83
percent of deaths due to low-voltage circuits (<1,000 volts)

14
age of George Junius Stinney Jr., who was killed in South Carolina's electric chair in 1944

What Happens When You Are Electrocuted?

Walking down the street, you see an interesting cable laying on the ground. Wondering where it came from, you grab it, not knowing it is a live wire that you just grounded, sending 2,000 volts through you in an instant. Eventually, your heart stops. Your brain stops. You are dead.

But what really happened? See below:

> Rapid irregular contractions of the heart until it stops.
> The body heats up to approximately 210 degrees F.
> The eyeballs melt.
> The body will convulse uncontrollably.
> The skin will be burned at the entrance and exit points.
> A scorched path will be burned through the body.
> Hair may catch on fire.
> Bodily functions will be lost.
> All muscles will tightly contract.
> Breathing is impossible.
> The brain will begin to bake.
> Stomach acids and contents will foam out of the mouth.
> The blood will begin to boil.

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